

台中港港口流況調查研究

第一部份 流況調查

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- 一、台中港港口附近海流可分為恆流（如黑潮流），潮流，風驅流及沿岸流（含裂流）四個成份。冬季東北季風增大時，風驅流顯著增加，沿岸因碎波產生沿岸流受北防波堤阻擋在港口附近造成較大之東流。北防波堤堤端 100m 內流速最大，往外延伸流速有減小之趨勢
- 二、冬季東北季風盛吹時，海流主要成份為風驅流，流向為西南向，沿岸分量風速與流速相關係數高達 0.89，延時約為二小時，風場領先流場。當風速減弱時，流速隨之減小，流向隨潮汐漲落而改變。
- 三、台中港港口附近恆流流向為東北向，流速約為 30cm/sec。流速能譜顯示潮流主要成份為半日潮流及全日潮流，半日潮流較全日潮流為大，潮位與潮流延時約為一至二小時。東北季風盛吹時流速與潮位相關係數甚小，隨季風減小相關係數有增加之趨勢。
- 四、本次調查雖未測得風速 20m/sec 以上之港口流速，但利用 B 測點流速與風速關係顯示，風速在 20 m/sec 時，流速仍為 140cm/sec。此與 71 年所測得風速 22 m/sec 流速 146 cm/sec 相當一致。研判防波堤堤端 100 m 內之流速可達 200 cm/sec 以上。

- 五、港口 B 測站水面下 4m 及 18m 兩測點之流速延時變化大部份時間表層流速略大於底層流速，但當鋒面過境時底層流速偶爾較表層流速大，研判此係因沿岸流受北堤阻擋造成東流通過港口。
- 六、潮位能譜分析結果顯示，半日潮能量約為全日潮能量之十餘倍。
- 七、台中港區風速每日零晨附近發生最小風速概率達 66.7%，下午二時左右發生最大風速則約為 60%，顯示風速有明顯之日週期存在，此與風速能譜分析結果相符合。
- 八、根據台中港務局 60 年至 65 年在水深 19 m 處所測得波浪資統計結果顯示台中港外海示性波高超過 2.5m 之累積概率約為 10%，61 年之累積概率約為 10%，61 年風速觀測資料顯示，北堤 24m 高風速超過 15m/sec 之累積概率約為 12%。

台中港港口流況調查研究

第一部份 流況調查

一、前 言

台中港務局為瞭解冬季強風侵襲時，港口附近流速分佈情形，作為規劃港口擴建，延伸防波堤之依據，委託本所辦理港口流況調查研究，現場調查工作自七十四年十二月開始至七十五年四月告一段落。因所測得部份資料不盡理想，自七十五年十二月至七十六年三月再辦理補測工作。謹將調查所獲得資料分析、統計結果描述如後：

二、現場作業情形

流況調查觀測站位置如圖 2-1 所示。台中港外海冬季因鋒面接連而來，風大浪高流急，辦理海象、氣象調查工作非常艱難。本所同仁經常冒七級以上強風出海作業；雖然如此，卻因漁民不合作，破壞了部份觀測設施，除了儀器流失，財物損失外，未能在觀測期間同時取得全部流速、波浪資料，以便辦理相關性分析更是無可彌補之最大損失。全部作業共計出海三十五天，如表 2-1。各測站儀器安裝、收回時間如表 2-2。

本計畫自七十四年十二月進行觀測以來，損失流速儀兩台，潮波儀一台遭受破壞，燈標、浮標等損失不計其數。波浪觀測，共安裝潮波儀六次，卻只能取得殘缺不全之波浪資料，讓委託之台中港務局失望，也帶給本所參與作業人員無限感傷。檢討原因不禁對海上漁民見利忘義，肆意破壞感到悲憤。

為彌補波浪資料不足現象，將台中港務局六十年至六十九年所測得風速及波浪資料重新分析，檢討波浪特性，以作為規劃之參考。

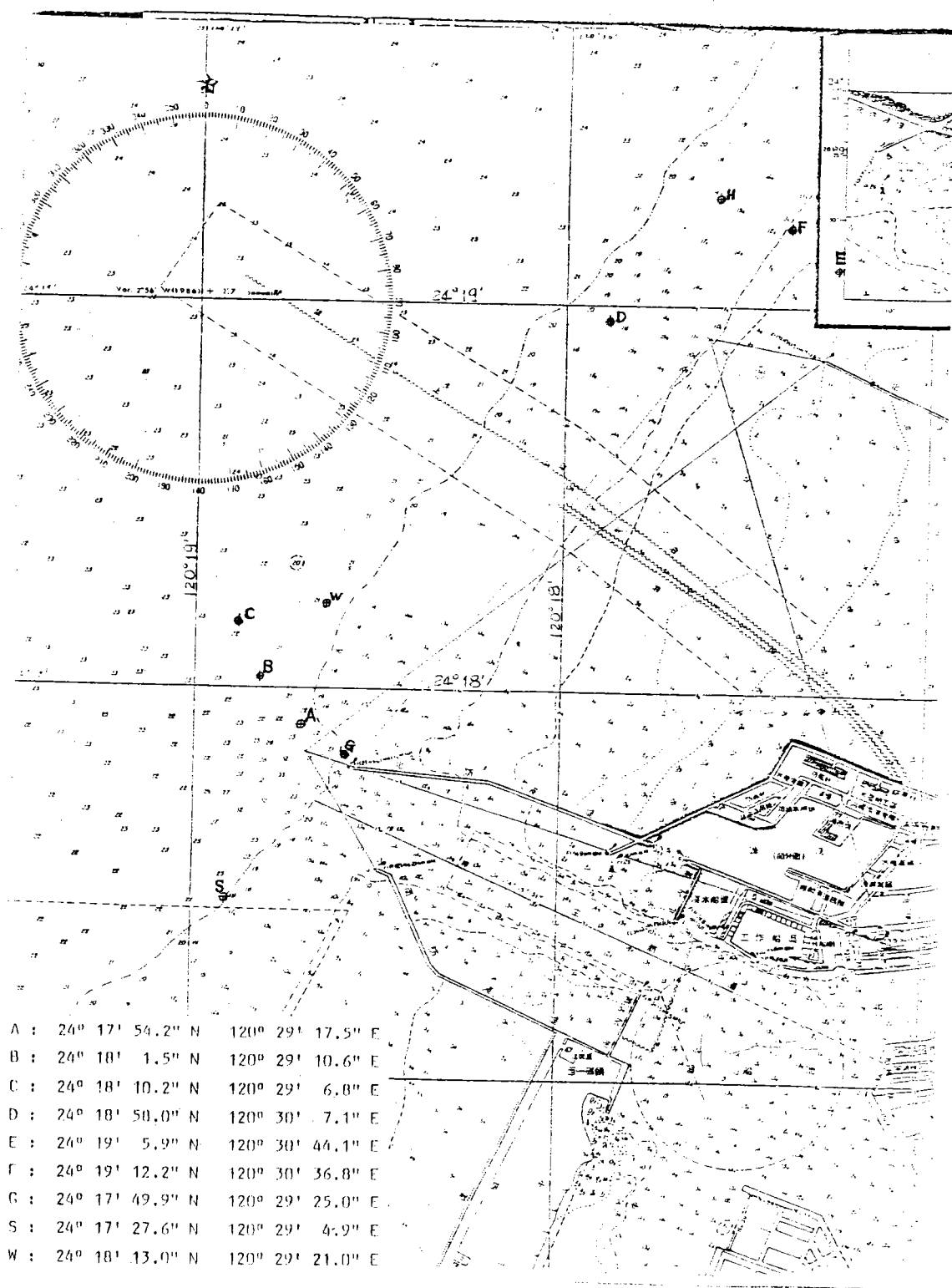


圖 2-1 觀測站位置圖

表 2 - 1 作業時間及工作內容

次數	時間	工作內容
1.	74.年 12.月 27.日	施放北沙堤外 E 點 4 m 深處海流儀 RCM4-4970
2.	75.年 1.月 3.日	施放北沙堤外 F 點 8 m 深處海流儀 RCM4-5951。
3.	75.年 1.月 16.日	港口外 B 站水面下 18 m (B D) , 及 4 m (B U) 兩測點分別施放海流儀 RCM4-7101 及 RCM-6047。
4.	75.年 1.月 17.日	施放大型固定燈標於觀測區, 以維安全, 收回 F 站 RCM-5951 海流儀。
5.	75.年 1.月 18.日	搜索尋回 E 站之海流儀 RCM4-4970。
6.	75.年 1.月 29.日	D 站施放 RCM4-4970 海流儀及燈標組, 加裝旗標, 以維儀器安全。
7.	75.年 1.月 30.日	W 站施放潮波儀 DNW5M-017, B 站加設燈標及旗標等。
8.	75.年 2.月 25.日	搜索並尋回 B 站海流儀 RCM4-7101 及 RCM4-6047
9.	75.年 3.月 4.日	A 站施放海流儀 RCM4-6047, 並施放燈標、旗標組
10.	75.年 3.月 5.日	收回 W 站潮波儀 DNW5M-017, 但潮波儀被漁網纏住, 失去功能。
11.	75.年 3.月 6.日	B 站 B U 及 B D 兩測點施放海流儀兩組 RCM4-5951 及 RCM4-7101。
12.	75.年 3.月 7.日	施放 DNW5M-017 潮波儀於 W 測站, 更換 D 站破損旗標。
13.	75.年 3.月 8.日	檢查各站儀器安全, 在 D 站施放 RCM4-4970 海流儀及海面燈標, 旗標兩組。
14.	75.年 3.月 11.日	C 測站施放 RCM4-5961 海流儀及燈標、旗標組, 保護儀器安全。
15.	75.年 3.月 18.日	檢查 D 測站流速儀及 W 測站潮波儀, 海面固定燈標及 A、B、C 各測站海流儀, 發現 A 測站儀器浮標燈等已流失。

表 2 - 1 作業時間及工作內容 (續)

16.	75.年 4.月 3.日	收回 D 測站 RCM4-4970 海流儀及 W 測站潮波儀，發現鐵架已扭曲變形，波浪資料再度未能取得。收起 C 測站海流儀，儀器被大件漁網纏住。收起 B 測站海流儀，上層海流儀尾舵折斷。搜索 A 測站海流儀，僅找到沉於 25. m 水深的錯鏈，但已被強力拉扯變形至斷裂，以致儀器流失。
17.	75.年 4.月 4.日	施放 B 測站兩組海流儀 RCM4-7101 及 RCM4-5961 施放 W 測站 DNW5-182 潮波儀於水深 20. m 處。
18.	75.年 4.月 8.日	施放 D 測站海流儀 RCM4-5951 及 S 測站海流儀 RCM4-4970 及燈標、旗標組。
19.	75.年 4.月 22.日	檢查 S 測站海流儀正常，檢查各測站儀器皆正常，唯 D 測站儀器浮標只剩一組，情況較危險。
20.	75.年 4.月 23.日	收回 S 測站海流儀及燈標等，收回 B 測站海流儀，D 測站海流儀被大片漁網纏住，清理後收回。
21.	75.年 4.月 24.日	收回 W 測站 DNW-5 潮波儀，以錯鏈固定燈標座，做為永久燈標及觀測站用。
22.	75.年 12.月 2.日	B 站，安裝 RCM4-7101 海流儀及 DNW5M-017 潮波儀
23.	75.年 12.月 3.日	A 站安裝 RCM4-4970 海流儀；檢視 B 站流速儀
24.	75.年 12.月 5.日	檢視 B 站，一切正常，A 站燈標、旗標均已不見 RCM4-4970 可能遭破壞。
25.	75.年 12.月 11.日	收回 B 站 RCM4-7101 海流儀及 DNW5M-017 潮波儀，搜尋 A 測站海流儀。
26.	75.年 12.月 12.日	施放 B 站 RCM4-7101 海流儀及 DNW5M-017 潮波儀，再次搜索 A 站海流儀。
27.	75.年 12.月 18.日	清除 B 站海流儀上纏網，加設燈標再搜索 A 站海流儀。
28.	75.年 12.月 30.日	檢視 B 站除流刺網外一切正常，尋找 A 站海流儀，未有所獲。

表 2 - 1 作業時間及工作內容 (續)

29.	76. 年 1. 月 7. 日	收回 B 站 RCM4-7101 海流儀及 DNW5M-017 潮波儀
30.	76. 年 1. 月 8. 日	搜尋 A 站海流儀，發現目標物，但因風浪變大，潛水人員無法下海收回。
31.	76. 年 1. 月 15. 日	重新搜索 A 站海流儀，因天氣不好未有所獲。
32.	76. 年 1. 月 16. 日	於 A 站位置再次搜索海流儀，確定已遭流失。
33.	76. 年 3. 月 3. 日	施放 H 站 RCM4-8297 海流儀，及警示燈標等。
34.	76. 年 3. 月 6. 日	施放 G 站 RCM4-5961 海流儀及警示浮標燈等。 安裝 H 站 DNW5-017 潮波儀
35.	76. 年 3. 月 24. 日	收回 G 站 RCM4-5961 海流儀。 收回 H 站 RCM4-8297 海流儀。 收回 H 站 DNW5-017 潮波儀。

表 2-2 各觀測站作業時間表

海流觀測	74年	75年					76年				兩次觀測，因儀器流失，無資料 B站下層 B站下層	
	12月	1月	2月	3月	4月		12月	1月	2月	3月		4月
A			$\frac{4}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$					
BU		$\frac{16}{1}$	$\frac{23}{1}$	$\frac{7}{1}$	$\frac{3}{1}$	$\frac{23}{1}$	$\frac{2}{1}$					
BD		$\frac{16}{1}$	$\frac{23}{1}$	$\frac{7}{1}$	$\frac{3}{1}$	$\frac{23}{1}$	$\frac{2}{1}$					
C				$\frac{11}{1}$	$\frac{3}{1}$	$\frac{3}{1}$						
D		$\frac{20}{1}$	$\frac{6}{1}$	$\frac{8}{1}$	$\frac{1}{1}$	$\frac{2}{1}$	$\frac{2}{1}$					
E	$\frac{27}{1}$	$\frac{16}{1}$										
F		$\frac{17}{1}$										
S					$\frac{9}{1}$	$\frac{21}{1}$						南堤外觀測站
G										$\frac{6}{1}$	$\frac{24}{1}$	距北堤頭50米處
II										$\frac{9}{1}$	$\frac{24}{1}$	北沙堤外水深17米處
波浪觀測		$\frac{20}{1}$	$\frac{7}{1}$	$\frac{2}{1}$	$\frac{24}{1}$	$\frac{24}{1}$	$\frac{2}{1}$					第一次觀測時儀器損壞
W							$\frac{2}{1}$					
B							$\frac{12}{1}$					
II							$\frac{12}{1}$			$\frac{6}{1}$	$\frac{24}{1}$	北沙堤外水深17米處

台中港港口流況調查各測站安裝，收回時間

三、基本資料分析

流況、潮汐、風速及波浪等調查資料，經由各種方法輸入 VAX-780 電腦後，利用列表機，印製逐時資料均已於處理完成後，送台中港務局參考。茲將流速、風速及波浪基本特性概述如下：

(一) 流速

自七十四年十二月至七十六年三月間各測站在不同之時間流速調查所得資料統計結果如附表 I。表中顯示調查期間各種流速、流向所佔比例。統計表底部為各觀測期間之平均流速，差異 (Variance)，標準中誤差 (STD)，最大流速及其發生時間，流向等特性。各測點流速重要特性摘錄如表 3-1。

平均流速大都在 25 cm/sec 至 35 cm/sec 之間，冬季最大流速超過 100 cm/sec，三、四月間之最大流速則約在 70 cm/sec 至 90 cm/sec 間。最大流速之流向大都偏 SW 向。最常發生之流向冬季時為偏 SW 向，三、四月季風轉型期則為偏 NE 向。觀測所得流速資以 E 測站在七十四年十二月卅一日廿一時 184.5 cm/sec 為最大。

表 3-1 各測站流速、流向統計特性

附表	測站	時間	平均流速 (cm/sec)	最大流速 (cm/sec)	最大流速 之流向 (°)	最大流速 發生時間	最常發生 流 向	資料可 用率 (%)	備 註
I- 1	BU	86/01/16-86/02/25	36.4	101.8	223.7	01/22/11	SW	100	資料太少
I- 2	BU	86/03/07-86/04/03	26.5	69.5	218.1	03/23/28	NNE	100	
I- 3	BU	86/04/04-86/04/23	31.5	94.1	220.0	04/11/21	NNE	100	
I- 4	BD	86/01/16-86/02/25	34.8	116.7	224.9	02/07/07	SW	100	
I- 5	BD	86/03/07-86/04/03	35.1	75.9	233.8	03/23/08	NNE	100	
I- 6	BD	86/04/04-86/04/23	27.5	76.7	227.5	04/12/00	NNE	100	
I- 7	C	86/03/11-86/04/02	18.6	43.0	37.1	03/13/09	NNE	20.4	
I- 8	D	86/01/29-86/03/06	32.1	94.6	222.7	02/06/10	SSW	88.7	
I- 9	D	86/03/08-86/04/03	25.8	76.3	219.4	03/23/03	NE	100	
I-10	D	86/04/08-86/04/23	9.2	33.0	43.9	04/08/19	NE	43.4	
I-11	E	85/12/27-86/01/18	38.7	184.5	219.5	12/31/21	SW	100	資料太少
I-12	F	86/01/03-86/01/05	54.8	83.3	224.7	01/15/09	NNE	100	
I-13	S	86/04/08-86/04/23	24.8	104.7	197.8	04/12/00	NNE	100	
I-14	BU	86/12/02-87/01/06	35.7	117.4	227.8	12/07/18	SW	97.2	
I-15	G	87/03/04-87/03/24	19.0	57.9	265.9	03/15/16	NNE	100	
I-16	H	87/03/05-87/03/24	14.8	37.7	49.3	03/07/15	NE	100	

(二)風速

附表 II 為本所北堤風速觀測站風速、風向統計表，表中顯示按月風速、風向所佔百分比。統計表底部為各種統計值，包括平均風速、最大風速、風向及其發生之時間等，歸納如表 3-2。

本所風速觀測站位於北防波堤與北防沙堤間，距離漲潮時水陸交界線約 10m，高程 EL= 27m。氣象局台中港測候站風速計安裝於台中港大樓頂上，高度距地面 33.2 m，高程約為 40m。圖 3-1 為本所觀測站 74 與 75 年所測得平均風速分佈。圖 3-2 為氣象局台中港測候站 70，71，74，75 年平均風速分佈。比較兩測站風速分佈顯示本所觀測站所測得風速較氣象局台中測候站量測之風速稍為偏大。此乃因本所測站位於海邊，風速不受任何地物影響，所測得風速幾可代表外海風速。從本所觀測所得平均風速統計結果顯示，全年 50% 以上風速在 5 m/sec 以下，超過 10 m/sec 所佔比例約為 20%，超過 15 m/sec 則約為 5%，大於 20 m/sec (含颱風) 不超過 1%。

本所北堤觀測站與氣象局台中港測候站月平均風速比較如圖 3-3，最大風速比較如圖 3-4。不論是月平均或月最大風速，本所觀測站所得資料均較氣象局觀測風速偏大。月平均風速大都小於 10 m/sec 以下。月最大風速除颱風外均不超過 25 m/sec。每年四月至八月之月平均風速在 5 m/sec 以下。

表 3-2 風速、風向統計特性

附表	時 間	平均風速 (m/s)	最大風速 (m/s)	最大風速 時風向 (°)	最大風速 發生時間	最常發生 風 向	資料可 用率 (%)	備 註
I-1	86/01/16-86/02/25	9.20	20.00	45.0	12/23/16	NE	100	
I-2	86/01/01-86/01/31	8.11	17.80	22.5	01/21/15	NE	92.9	
I-3	86/02/01-86/02/28	8.70	19.00	45.0	02/20/19	NE	84.7	
I-4	86/03/01-86/03/31	5.83	15.60	45.0	03/23/00	NE	91.4	
I-5	86/04/00-86/04/30	5.05	16.10	45.0	04/11/18	NE	100	
I-6	86/12/01-86/12/31	7.97	19.80	67.5	12/01/05	ENE	100	
I-7	87/01/01-87/01/31	7.52	18.20	67.5	01/24/07	ENE	99.3	
I-8	87/03/01-87/03/31	5.73	18.00	67.5	03/25/21	ENE	98.7	

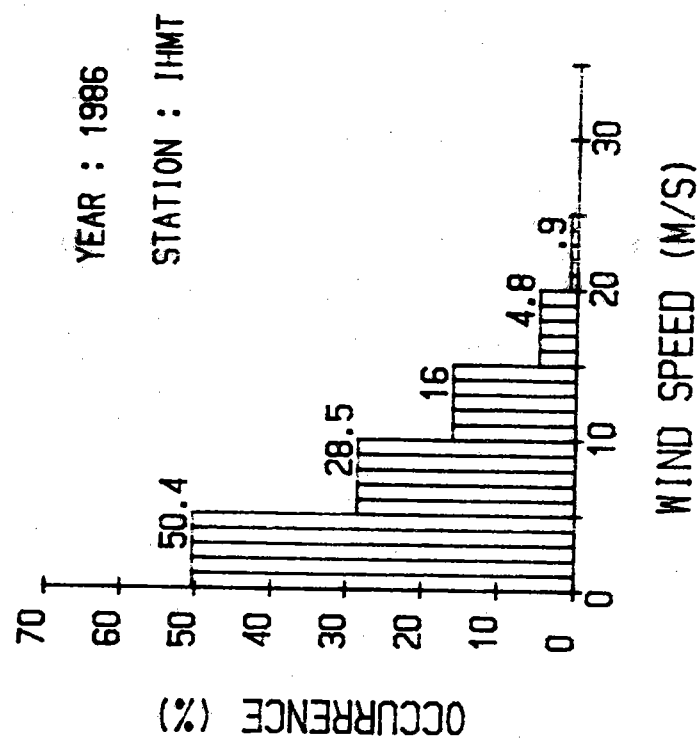
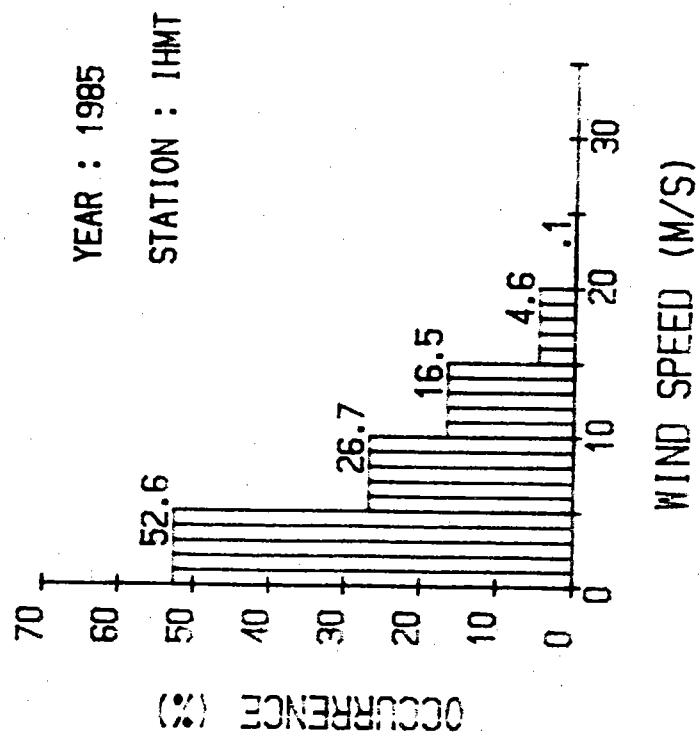


圖 3 - 1 本所北沙堤觀測風速分佈

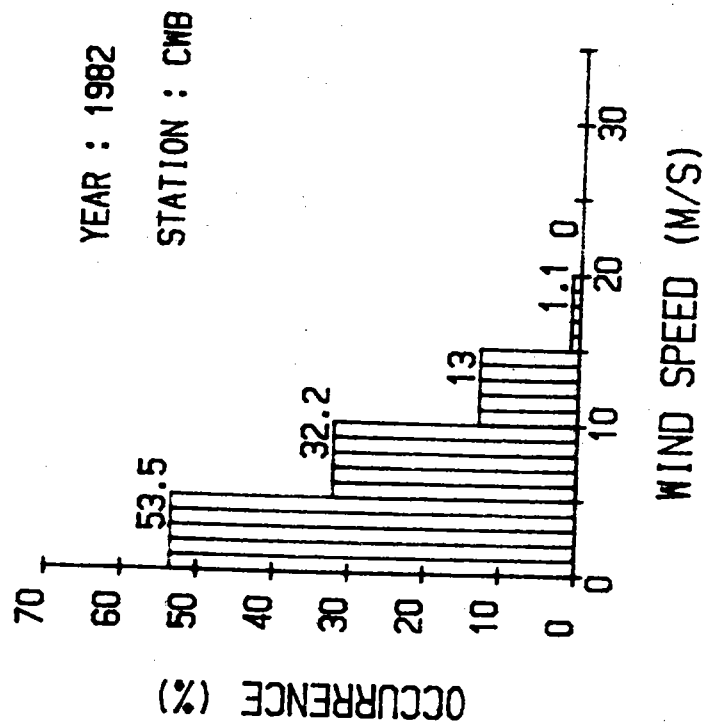
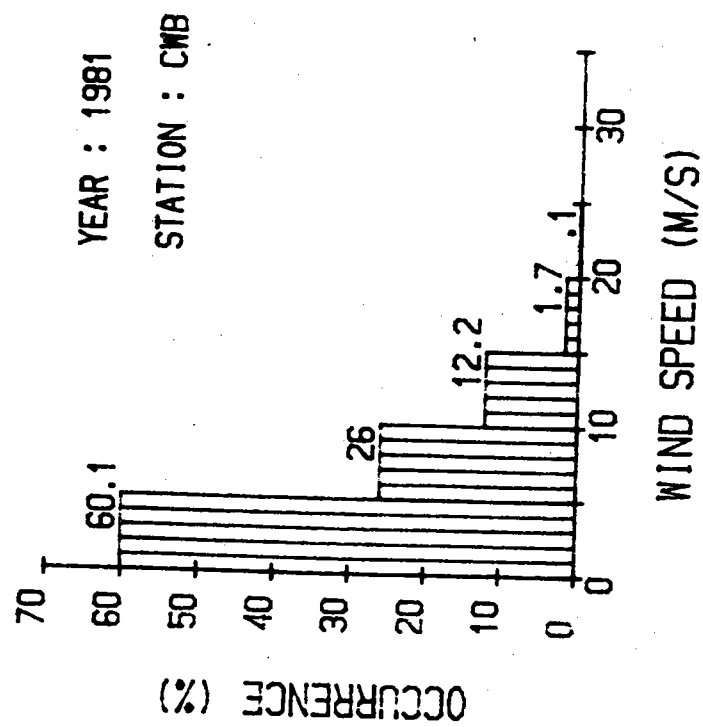


圖 3 - 2 ① 氣象局台中港測站風速分佈

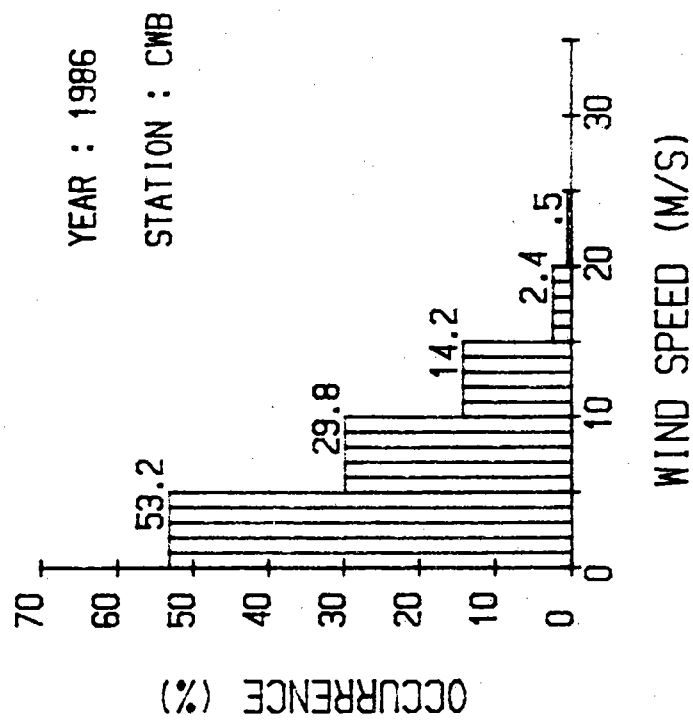
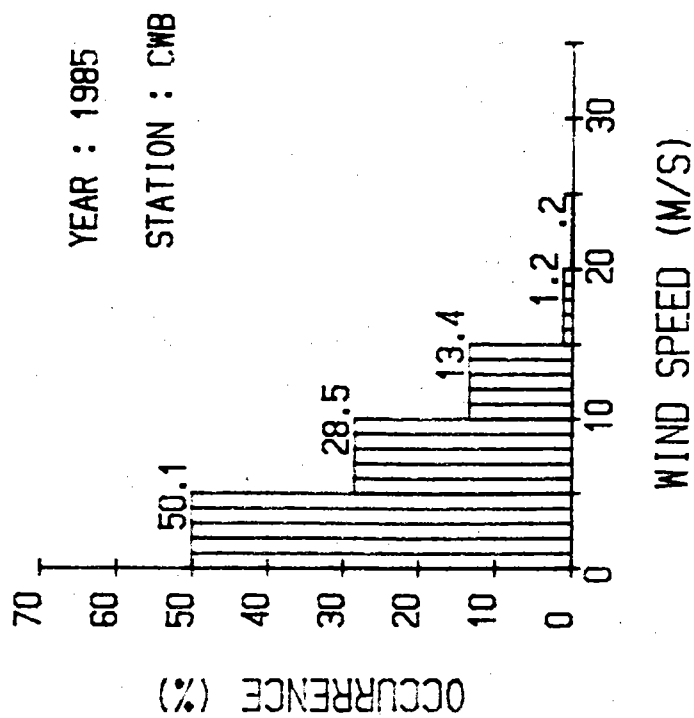


圖 3 - 2 ⑥ 氣象局台中港測站風速分佈

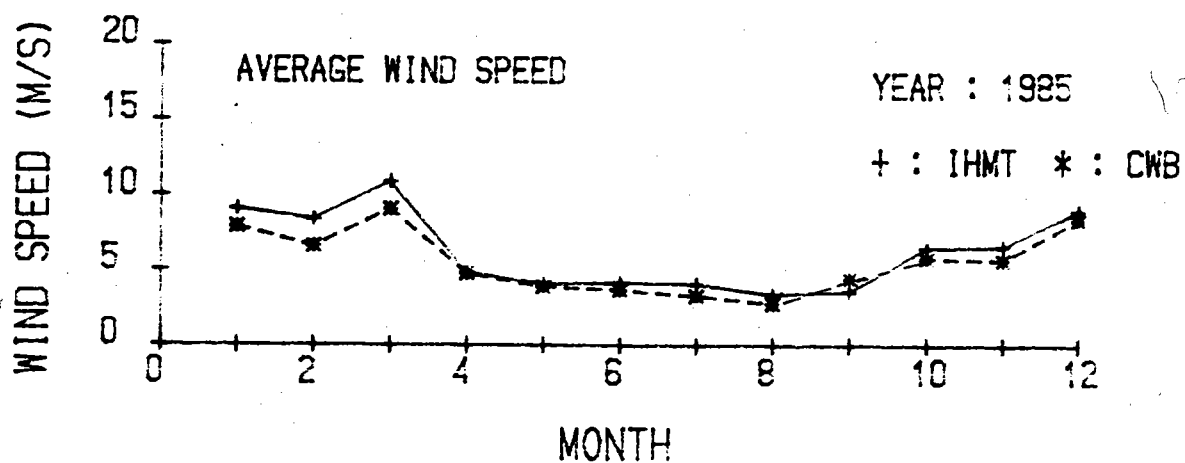
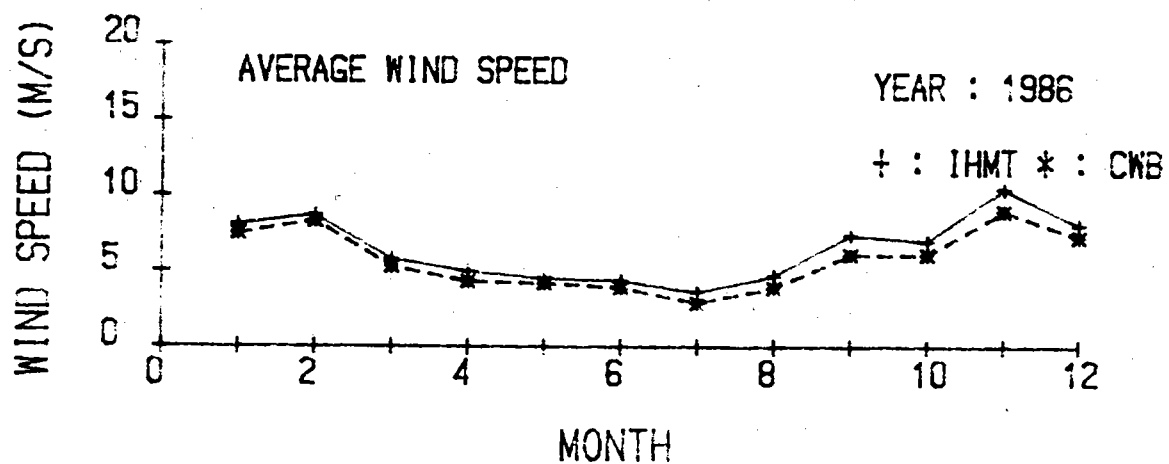


圖 3 - 3 本所與氣象局測站月平均風速比較

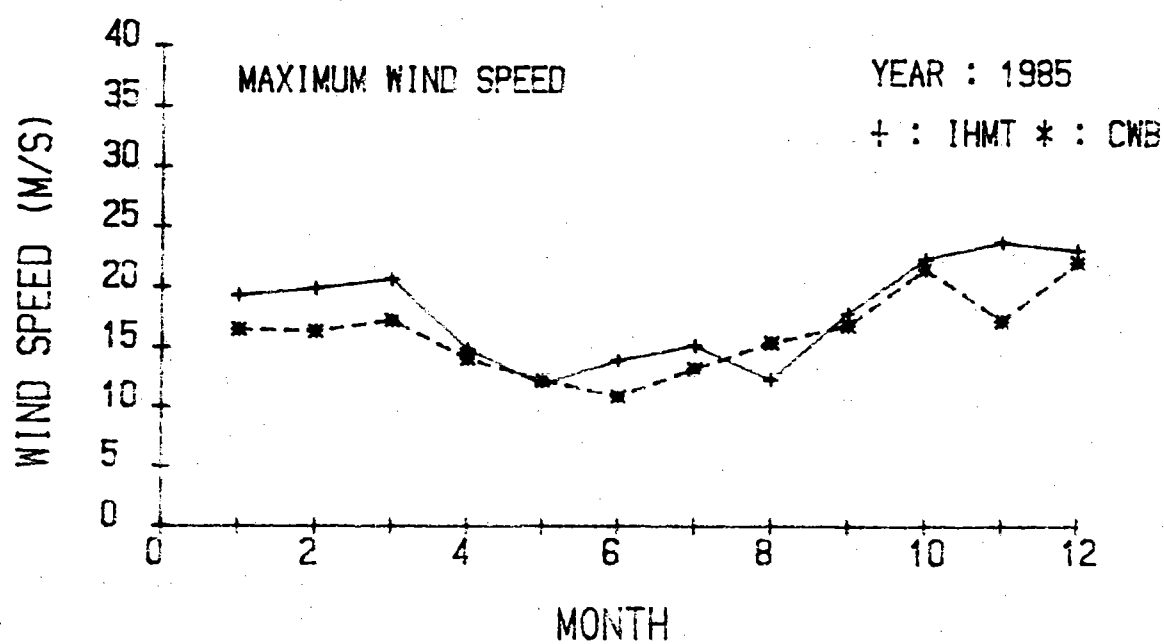
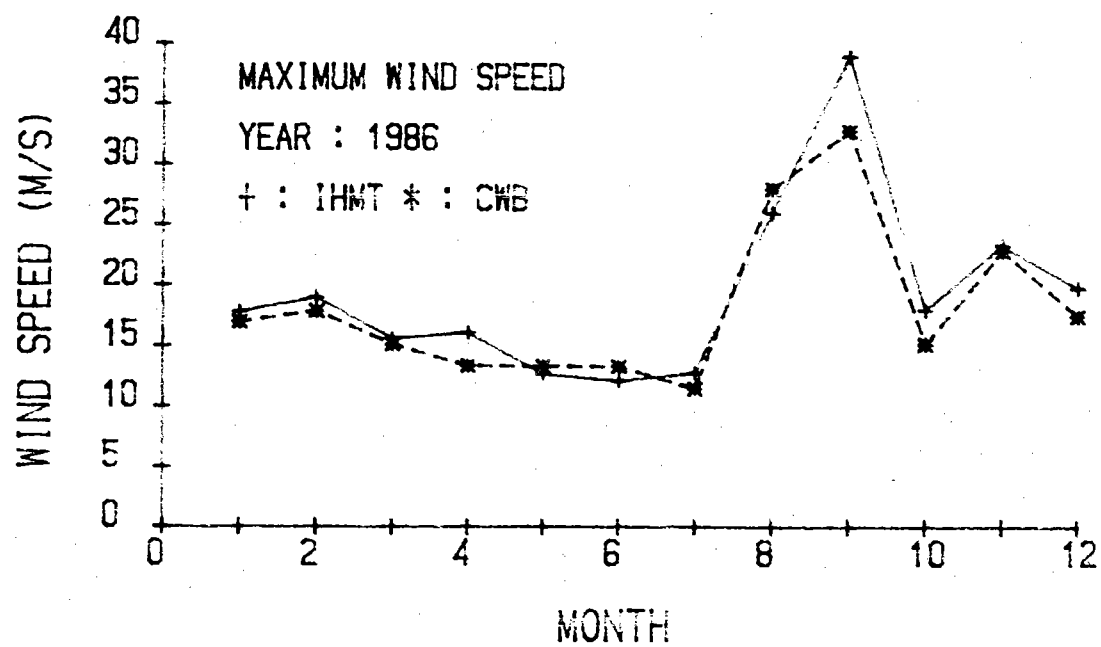


圖 3 - 4 本所與氣象局測站月最大風速比較

(三) 波浪

附表 III 為波浪觀測資料統計表。因波浪觀測儀器屢遭漁船破壞，所得資料殘缺不全，茲將資料綜合歸納如表 3-3。

表 3-3 示性波浪統計特性

附 表	時 間	測 站	平均波高 (m)	最大波高 (m)	最大波高 週期 (sec)	最常發生 週期 (sec)	預測資料可 用率(%)	備 註
III-1(b)	86/12/02-86/12/11	B	2.03	4.68	9.37	7.0-8.0	91.67	資料太少
III-2(b)	86/12/12-87/01/07	B	1.80	5.20	6.10	7.0-8.0	84.57	
III-3(b)	86/03/07-86/03/10	W	0.71	1.74	8.36	6.0-8.0	46.34	
III-4(b)	86/04/08-86/04/24	W	0.73	3.61	8.90	7.0-8.0	87.77	
III-5(b)	87/03/06-87/03/24	H	0.54	2.05	7.17	8.0-9.0	66.05	

觀測資料實在太少，而且品質也不盡理想，如果以此資料作為研判台中港外海波浪狀況的確是一種冒險行為。

四、海象、氣象資料特性

(一) 流速、風速及潮位延時特性

風速及潮汐為影響台中港外海流速之兩大主要因素，為了解相互間之關係，將流速、風速與潮位之延時變化繪如附圖 I。茲將各測站流速延時特性描述如下：

1. B 測站：B 測站設於北防波堤堤頭海側約 1000 m 處，水深低潮位下約 20 m。75 年 1 月 4 日間同時觀測 B 測站水面下 4m (BU) 及水面下約 18m (BD) 兩測點之流速。由附圖 I-1, I-2, I-3 及 I-11 顯示，東北季風增強時，風驅流成份顯著增加，流向偏西南，而當東北季風風速減弱時，流之主要成份為海洋恆流與潮流，流向隨漲退潮變化，低潮轉潮時（開始漲潮時）流向偏北，退潮時，流向為西南向。B 測站 BU 及 BD 兩測點觀測資料顯示流速與流向幾乎同步，流速大小僅有極些微之差異。75 年 12 月至 76 年 1 月再觀測 B 站上層流速（如附圖 I-11），其特性與七十五年初所測得流速資料極為一致。當風速較小時，流速大都在 30 cm/sec 以下。

2. C 測站：C 測站位於北堤堤頭西北側約 1500m 處，水深約 22m，儀器安裝於水面下 4m。觀測期間為 75 年 3 月 11 日至 4 月 3 日，因流速儀被漁網纏住，僅取得極小資料。
3. D 測站：D 測站設於北防沙堤堤頭海側約 1000 m，水深約 18m 處，流速儀安裝在水面下 4m。觀測期間自 75 年 1 月 29 日至 75 年 4 月 23 日。流況延時資料（如附圖 I-5，I-6及 I-7）顯示，冬季東北季風盛吹時，流速、風速延時特性與 B 測站相似，風速增加時，流速隨之加大，流向偏西南。三、四月間東北風速減弱，流向隨潮汐漲落變化，主流向為西南向。沿岸流速為主要成份，平均流速在 30 cm/sec 左右。
4. E 測站：E 測站設於北沙堤北側約 800m 處，水深 4m，流速儀安裝於水下 2m 處。觀測期間自 74 年 12 月 27 日至 75 年 1 月 18 日。流速、風速及潮位延時變化如附圖 I-8 所示。本測站因離岸太近，觀測期間東北季風盛吹，流速隨風速增加而顯著加大。74 年 12 月 31 日 21 時曾測得最大流速為 184 cm/sec，當時風速為 16 m/sec，流向西南，受北沙堤影響，有偏西之趨勢，最大流速發生在低潮轉潮時，研判此乃因低潮時，測站位於碎波帶附近受強烈沿岸流影響所致。

5. F 測站：位於北防沙堤堤頭北側約 800m 處，水深 8m。觀測期間自 75 年 1 月 3 日至 1 月 17 日，因受漁網纏住，僅取得 1 月 3 日至 5 日資料，其趨勢與 E 站相似。流速、風速及潮位延時變化如附圖 I-9。
6. G 測站：G 測站位在北堤堤頭向海側延伸約 50 m 處，儀器安裝於水面 4m。觀測期間自 76 年 3 月 6 日至 3 月 24 日為止。流速、風速延時變化如附圖 I-12。流速隨風速增加而增大，東北季風吹襲時受北防波堤導流影響，流向有偏西之趨勢。
7. H 測站：H 測站位於北沙堤堤頭海側約 1000m 處，水深約 17 m，流速儀安裝於水面下 4 m。觀測期間與 G 測站相同，流速、風速及潮位延時變化，如附圖 I-13 所示。流速隨風速改變情形較 G 測站不顯著。
8. S 測站：S 測站於港口南方約 1200 m 處，流速儀安裝在水面下 4m。觀測期間自 75 年 4 月 8 日至 4 月 23 日止，觀測時間東北季風期已過，東北風吹送時間極為短暫，流速隨風速增加，當風速減低或吹西南風時，流向隨潮汐漲落改變，流速受風速影響不顯著。

(二) 流速、風速統計特性

1. B 測站：B 測站流速統計方塊圖如附圖 II-1(a), II-2(a) 及 II-3(a)，其對應風速統計方塊圖如 II-1(b), II-2(b) 及 II-3(b)。當冬季東北季風較強時，(II-1(b)) 將近 70% 風向為 NE，平均風速為 8.53 m/sec，在此期間所測得流向約 60% 偏西南向。流速絕大部份都在 30 cm/sec 以下，平均流速為 34.79cm/sec。沿岸流速為主要成份，向離岸流極小。當冬季季風期過後，3 月及 4 月測量結果，東北風向仍佔大部份，但風速顯著減小，大部份都在 10 m/sec 以下，平均風速約為 5.5 m/sec，如附圖 II-2(b) 及 II-3(b)。流向逐漸由偏西南向轉偏東北向，如附圖 II-2(a) 及 II-3(a)，平均流速維持在 30cm/sec 上下。沿岸流仍為主要分量。
2. C 測站：風速統計方塊圖如附圖 II-4(b)，風速大都在 10 m/sec 以下，主風向偏 NE，約佔 70%，但因三、四月間風速減弱。從所獲得之少數流速資料統計，如附圖 II-4(a)，顯示流向偏東北向，流速大都在 30 cm/sec 以下。
3. D 測站：第一段觀測初期，東北季風較顯著，方塊圖如附圖 II-5(b)，70%以上風向都集中 NE，風速超過 10 m/sec 佔相當大之比例，此期間 60% 以上流向偏西南

向,流速大於 50 cm/sec 約佔 25%, 如附圖 II-5(a)。
三、四月觀測資料顯示,因季節轉移東北流向所比例逐漸增大,流速則大都在 30 cm/sec 以下, 如附圖 II-6 及 II-7。

4. E 測站：觀測期間正值東北季風盛吹, 風向 80% 以上偏東北, 超過 10 m/s 風速約佔三分之一, 流速大部份均在 50 cm/sec 以下, 主流向為西南向。
5. F 測站：觀測資料甚少, 趨勢與 E 站相似。
6. G 測站：觀測期間正值東北季風轉型期, 主要風向為 NE 及 SW, 如附圖 II-13(b)。當風向為 NE, 風速轉大時, 流向為 W, 而風速減小時, 流向為 SW; 風向若轉為 SW, 則流向為 NE 或 SW, 隨漲落潮變化, 如附圖 II-13(a)。
7. H 測站：觀測期間為季風轉變期, 風向 NE 及 SW 約各佔一半, 如附圖 II-14(b), 風速大都小於 8 m/sec, 東北風向或退潮時流向偏 SW。NE 向流仍為主要流向, 如附圖 II-14(a)。
8. S 測站：觀測期間雖然東北風佔大部份, 但風速大都在 10 m/sec 以下, 流向主要為東北向。

(三) 潮汐統計特性

每月潮位統計方塊圖如附圖 III-1 顯示，潮位範圍在 0 至 5.0m 之間，高、低潮位所佔比例較小，轉潮前後佔較大比例。其餘潮位分佈比例相當均勻。潮位能譜分析結果如附圖 III-2，台中港潮汐主要成份為半日潮與全日潮位，而以半日潮為主。半日潮振幅約為 1.6 至 1.7m，全日潮振幅約為 0.3 至 0.4 m，因此半日潮能量約為全日潮能量之二十餘倍。

(四) 流速、風速能譜特性

風速能譜分析結果，如附圖 IV 顯示。除長週期能量外，日週期 (24 hrs) 風速能譜在向 (離) 岸分量極為顯著，而沿岸方向則無此現象，此與台中港區風速統計特性相當一致。根據台中港區風速統計特性顯示，台中港每天下午二時左右風速最大，凌晨時風速最小。

流速能譜如附圖 IV，長週期沿岸能量佔極大部份比例，海流受半日週期潮流影響較日週期大，但不如潮汐顯著。研判此係受海底摩擦影響所致。

(五) 流速與相對應風速向量進行特性

流速與相對應時間風速向量進行圖如附圖 V。各測站流速向量進行路徑完全決定於相對應時間之風速與風向。

以 B 測站上層測點 BU 為例，風速向量進行圖如附圖 V-1 (b) 顯示第一天至第三天，風速向量前進量不大，表示風速甚小，此時流速向量進行路徑為 NNE，如附圖 V-1 (a) 所示，第四天至第八天東北風速增大，風速向量進行量顯著增加，流速西南向進行量隨之增大，第八天風速減弱，流速向量進行路徑偏北，第十天後風速又增強，流速向量進行路徑又折向西南。B 測站兩測點 BU 及 BD 相同，觀測時間向量進行路徑（如附圖 V-1 (a) 及 V-2 (a)，V-3 (a) 及 V-4 (a)）比較顯示 B 測站兩測點流速向量進行特性極為相似。測站 D、E、F 及 H 流速向量進行圖與 B 站特性相同。G 測站位置港口北防波堤海側 50 m 處流速向量進行圖，（如附圖 V-11 (a)）顯示，風速較小或西南風時，流速向量進行路徑為 NNE 向；當東北風速增大時，因受防波堤導引強制裂流影響，流速往西南前進。

(六) 風速與流速東西分量、南北分量、沿岸分量及向離岸分量相關特性

各測站流速與風速交相關係數及延時如表 4-1。由表 4-1 顯示，除向（離）岸分量外，冬季東北季風盛吹時交相關係數高達 0.8 以上，隨季節風減弱，流速與風速交相關係數逐漸減小。B 站一、二月份流速與風速沿岸分量交相關係數高達 0.89，而在 4 月 4 日至 23 日觀測資

表 4-1 流速與風速交叉關係數與延時

測 站	時 間	東 西 分 量		南 北 分 量		沿 岸 分 量		向 (離) 岸 分 量		備 註
		係數	延時 (hr)	係數	延時 (hr)	係數	延時 (hr)	係數	延時 (hr)	
B U	86/01/16 - 86/01/29	0.88	1	0.81	2	0.89	2	0.26	-	V1 - 1
B D	"	0.89	1	0.82	1	0.89	1	0.21	-	V1 - 2
B U	86/02/03 - 86/02/25	0.88	3	0.82	3	0.89	3	0.18	-	V1 - 3
B D	"	0.79	2	0.73	2	0.81	2	0.21	-	V1 - 4
B D	86/03/07 - 96/04/03	0.70	1	0.63	6	0.75	2	0.18	-	V1 - 5
B D	86/04/04 - 86/04/23	0.63	7	0.64	9	0.69	7	0.27	-	V1 - 6
D	86/03/08 - 86/04/03	0.71	5	0.60	1	0.69	3	0.18	-	V1 - 7
E	85/12/27 - 86/01/18	0.76	2	0.72	2	0.82	2	0.23	-	V1 - 8
S	86/04/03 - 86/04/23	0.55	5	0.69	7	0.71	5	0.28	-	V1 - 9
G	86/03/06 - 86/03/24	0.64	1	0.33	-	0.57	2	0.35	-	V1 - 10
H	86/03/05 - 86/03/24	0.60	2	0.46	6	0.62	2	0.20	-	V1 - 11

料分析結果，沿岸分量交相關係數減為 0.69，東西分量及南北分量亦分別減為 0.63 及 0.64。流速與風速向（離）岸分量交相關係數，除 G 測站為 0.35 外，其餘測站資料均在 0.30 以下，東北季風盛吹時相關係數顯得較小。

(七) 潮位與流速東西分量、南北分量、沿岸分量及向（離）岸分量相關特性

潮位與流速相關性分析結果如附圖 III。除 E 測站因水深較淺，受漲落潮之影響流速變化較顯著，向（離）岸分量交相關係數達 0.52 外，其餘測站在冬季東北季風盛吹期，相關性均極小，當冬季季風期過後，潮汐對流速影響逐漸增大以 B 測站 BD 測點為例，其交相關係數如附表 4-2。

表 4-2 B 測站 BD 測點潮位與流速分量交相關係數

時 間	E - W	N - S	ALONG-S	CROSS-S	備 註
01/16-01/29	0.23	0.22	0.22	0.38	BU與BD相似
02/03-02/25	0.17	0.16	0.17	0.22	"
03/07-04/03	0.32	0.33	0.30	0.42	
04/04-04/23	0.45	0.34	0.40	0.21	

除向（離）岸外，隨冬季季節風消逝，潮位與流速交相關係數顯著增加。

(八) 風速、潮位與流速相關特性

附圖 VIII 為不考慮風速與流速方向，風速與流速相關特性分析結果。風速、潮位與流速間最大交相關係數如表 4-3。冬季季節風較大時，風速與流速交相關係數都在 0.6 以上，延時約二至三小時風場領先流場，由 B 測站 BD 測點相關係數明顯可見，隨季節風逐漸消逝，風速與流速相關性逐漸減小。比較 B 測站上、下兩測點，可知上層測點 BU，風速與流速相關性較弱，但隨季風減弱交相關係數有增加之趨勢。此時半日流能量比例增大。七十五年五月所測得資料顯示，夏季型潮位與流速相關係數高達 0.7 以上，潮波領先流場。

(九) 流速與對應風速關係

附圖 IX 為流速與對應風速關係圖。由流速與風速相對應資料顯示，風速小於 6m/sec 時，流速受風速影響不顯著。B 測站上、下兩測點流速與風速相關係相當一致。流速中潮流成份未能濾掉，當潮流與風驅流同向時，流速增強，而潮流與風驅流反向時，流速減弱。流速與風速關係顯得有點散亂，且散亂幅度隨風速增加而有增大之趨勢。

表 4 - 3 風速、潮位與流速之交相關係數

測 站	時 間	風速與流速交相關係數	潮位與流速交相關係數	備 註
B U	86/01/16 - 86/01/29	0.70	0.09	
B D	86/01/16 - 86/01/29	0.69	0.10	
B U	86/02/03 - 86/02/25	0.66	0.08	
B D	86/02/03 - 86/02/25	0.55	0.05	
B D	86/03/07 - 86/04/03	0.39	0.25	
B D	86/04/04 - 86/04/23	0.22	0.37	
D	86/03/08 - 86/04/03	0.54	0.11	
E	85/12/27 - 86/01/18	0.68	0.18	
S	86/04/08 - 86/04/23	0.50	0.26	
G	87/03/06 - 87/03/24	0.35	0.30	
H	87/03/05 - 87/03/24	0.27	0.10	

流速上限包絡線可視為風驅流，同向潮流等之合成流速，流速下限包絡線則為風驅流，月逆向潮流等之合成流速，因此在考慮最大流速時應採上限包絡線。

(十)波浪特性

波浪延時資料如附圖 X 顯示東北季風增強時，波浪隨之加大，觀測期間測得 B 站最大示性波高為 5.2m，發生於 75 年 12 月 22 日 0 時，其次為 4.68m 發生於 75 年 12 月 7 日 11 時。波高與週期統計方塊圖如附圖 XI，顯示 B 站在 12 月份示性波高大部份集中於 1m 至 3m 間，示性週期則為 7sec 至 8sec 間。W 及 H 站在三至四月所測得波高大都在 1.5m 以下，週期在 6sec 至 8sec 間。波譜分析結果如附圖 XII。

(十一)各測站觀測期間最大流速特性

各測站觀測期間最大流速、流向及發生最大流速時風速、風向歸納如表 4-4。

表 4-4 觀測期間最大流速、流向

測站	觀測期間	最大流速 發生時間	最大流速 (cm/sec)	最大流速 流 向	風 速 (m/sec)	風向	同時間其他 測站流速 (cm/sec)	備 註
BU	75/01/16-02/25 75/03/07-04/23	01/22/11	101.78	SW	14.4	NE	D:94.59 BD:83.5	
BD	75/01/16-02/25 75/03/07-04/23	02/07/07	116.72	SW	11.9	NE	BU:65.64 D:66.15	
BU	75/12/02-12/30	12/07/18	117.42	SW	18.0	NE		
D	75/01/29-04/23	02/06/0	94.58	SW	15.2	NE	BU:92.30	
E	74/01/20- 75/01/18	12/31/21	184.52	SW	16.0	NE		平均流速 38.72cm/ sec
F	75/01/03-01/05	01/05/09	83.33	SW	15.0	NE		
S	75/04/08-04/23	04/12/00	104.69	S	12.4	NE		

從以上資料顯示東北季風增大時，發生最大流速，除 E 站外流速約在 80 cm/sec 至 120 cm/sec 間，流向為 SW 向，最大流速大都發在最高潮後一至二小時。

五、往昔調查研究資料分析

台中港港口冬季風大、流急、波濤洶湧，漁船作業頻繁。本所雖盡力做好觀測工作，但因不可抗拒因素太多，無法獲得預期結果。為了彌補觀測資料不足，將台中港過去調查研究結果陳述如后。分析比較所得結果提供港口擴建規劃之參考。

(一) 流速

台中港工程局雖曾辦理流速觀測，取得極為短暫之零星流速，且均在四月中旬風平浪靜時測量，經調和分析獲得外海水深 19m 處恆流流速約在 20cm/sec 至 30cm/sec 間。71 年本所接受中國石油公司委託辦理港口海、氣象調查研究，觀測台中港外海波浪、港口流速及岸邊風速。波高計及流速計安裝位置如圖 5-1。部份風速、流速、波浪及潮位延時變化如圖 5-2。當風速超過 20 m/sec 時，港口附近流速顯著增加。B 站在 70 年 11 月 7 日 20 時測得最大流速為 146.3 cm/sec，此時風速約為 22 m/sec。C 站在 70 年 11 月 27 日 8 時，測得最大流速為 211.95 cm/sec，當時北堤 24m 高之風速為 23 m/sec。由流速延時資顯示，風速較小時，B 站與 C 站流速趨於一致，流向隨漲退潮成明顯變化，當風速增強時，C 站受防波堤束流

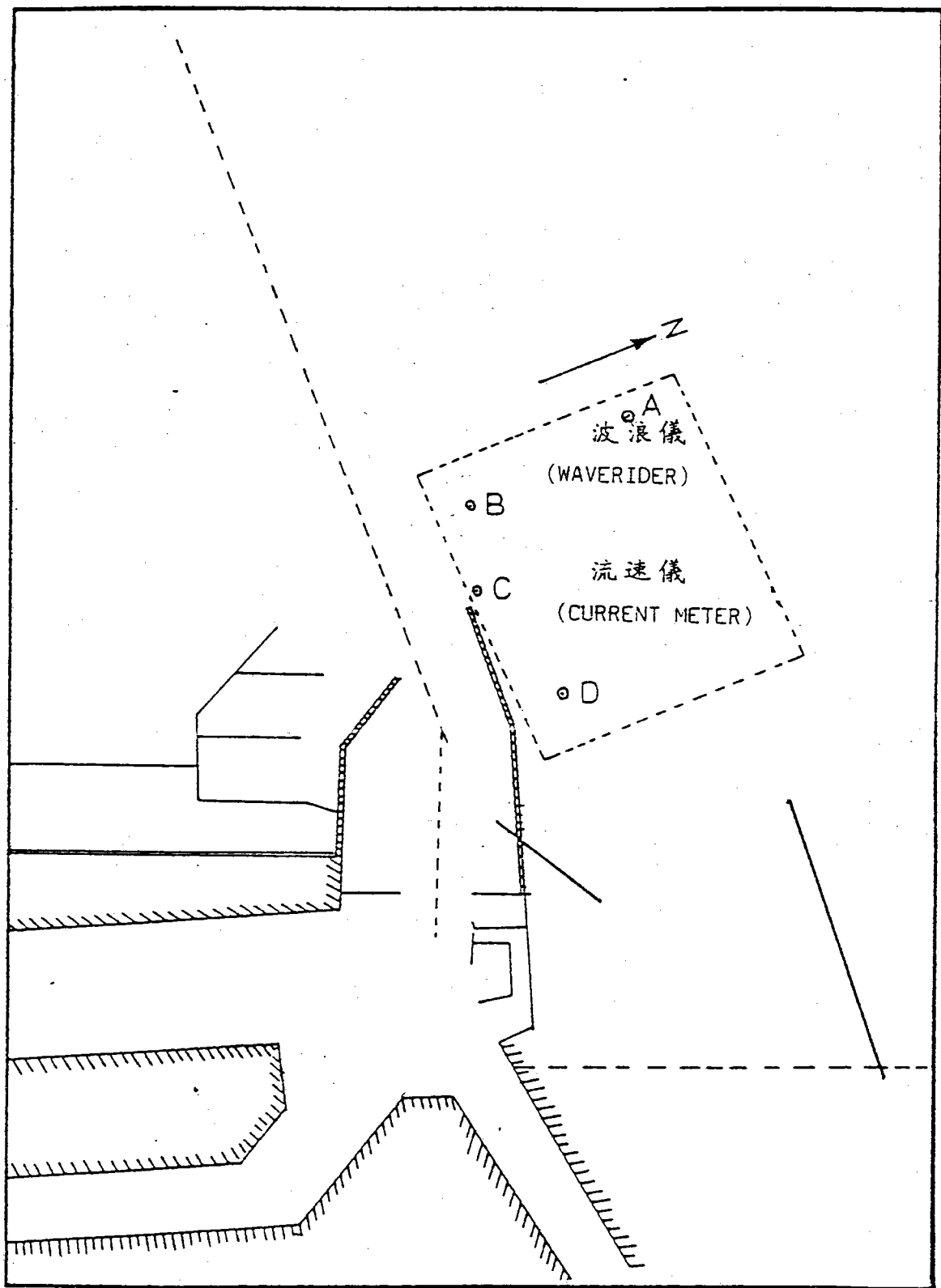


圖 5 - 1 台中港港口附近測站位置圖

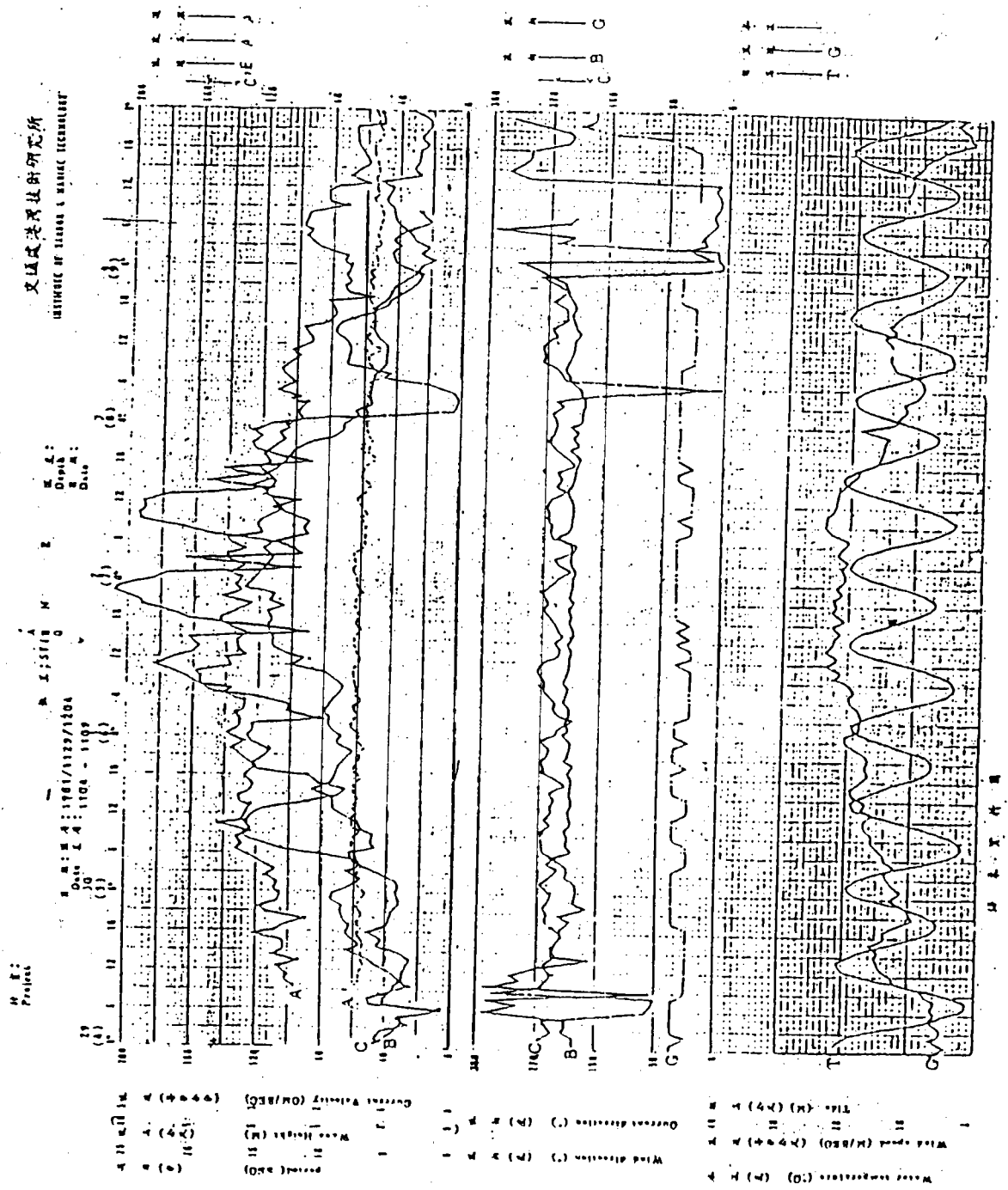


圖 5-2 ③ 台中港港口附近風、浪、流與潮位延時變化

W. A. :
D. 10
S. A. :
D. 10

W. A. :
D. 10
S. A. :
D. 10

W. A. : 1027-1103
D. 10 : 1027-1103
S. A. : 1027-1103
D. 10 : 1027-1103

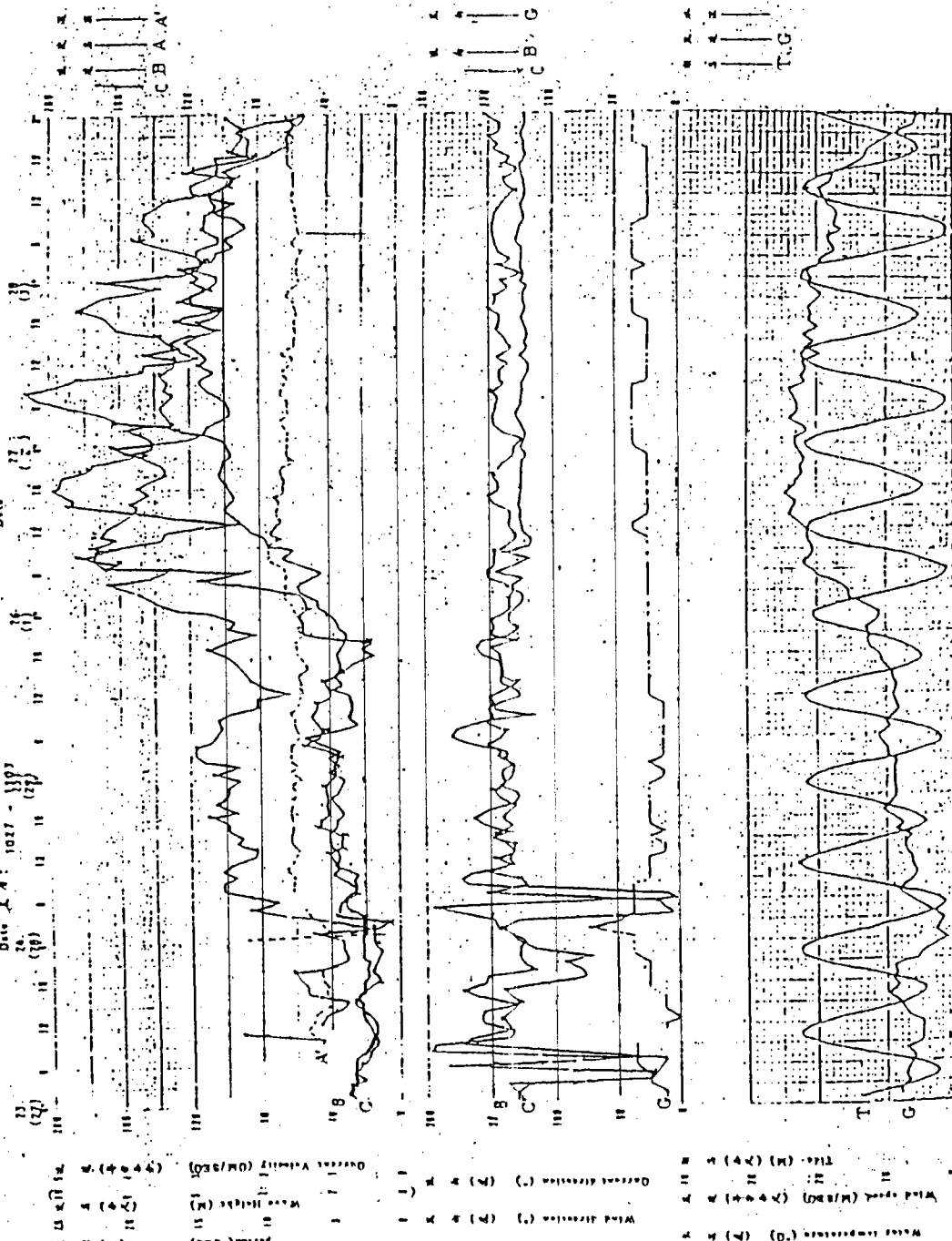


圖 5-2 ⑥ 台中港港口附近風、浪、流與潮位延時變化

影響，流速急遽增大，B 站亦隨之增加。當 C 站發生最大流速時，B 站流速較 C 站約小 80 cm/sec。C 站流向較 B 站更偏西流。

本次調查所得 B 測站流速與風速關係如圖 5-3。潮流隨漲退潮而改變流向，當潮流與沿岸流風驅流流向一致時，產生最大流速，反向時，流速減小。因此，在探討最大流速時，必須採用所有上限資料點之包絡線。雖然此次調查未能測得風速 20m/sec 以上之流速資料，但由流速與風速資料分佈，利用上限包絡線推估 B 站在風速 20m/sec 時，流速可達 140 cm/sec 以上。由流速與風速迴歸方程式，計算風速 20m/sec 時，流速約為 110 cm/sec。台中港港口附近潮流約為 30 cm/sec，若潮流與風驅流同向，兩者疊加，總流速約為 140 cm/sec。從以上陳述，可知本次流速測量所得資料與 70 年觀測結果甚為一致。

(二)波浪

台中港於 60 年在水深 19m 處安裝超音波波高計，每隔二小時紀錄外海波浪 20 分，每日取得 12 次波浪統計資料。自 60 年 7 月開始觀測。

62 年台中港工程局根據 60 年 8 月至 61 年 7 月一年之完整波浪資料分析 $H_{1/10}$ ， $H_{1/3}$ ，及 H_{ave} 三種統

* AREA : TAI-CHUNG HAROUR
 * DURATION : 86/01/16/15: 0-86/01/29/19:0
 * TOTAL NO. : 317

$$Y(t) = 23.238 + -1.143 X(t-2) + 0.252 X(t-2)**2$$

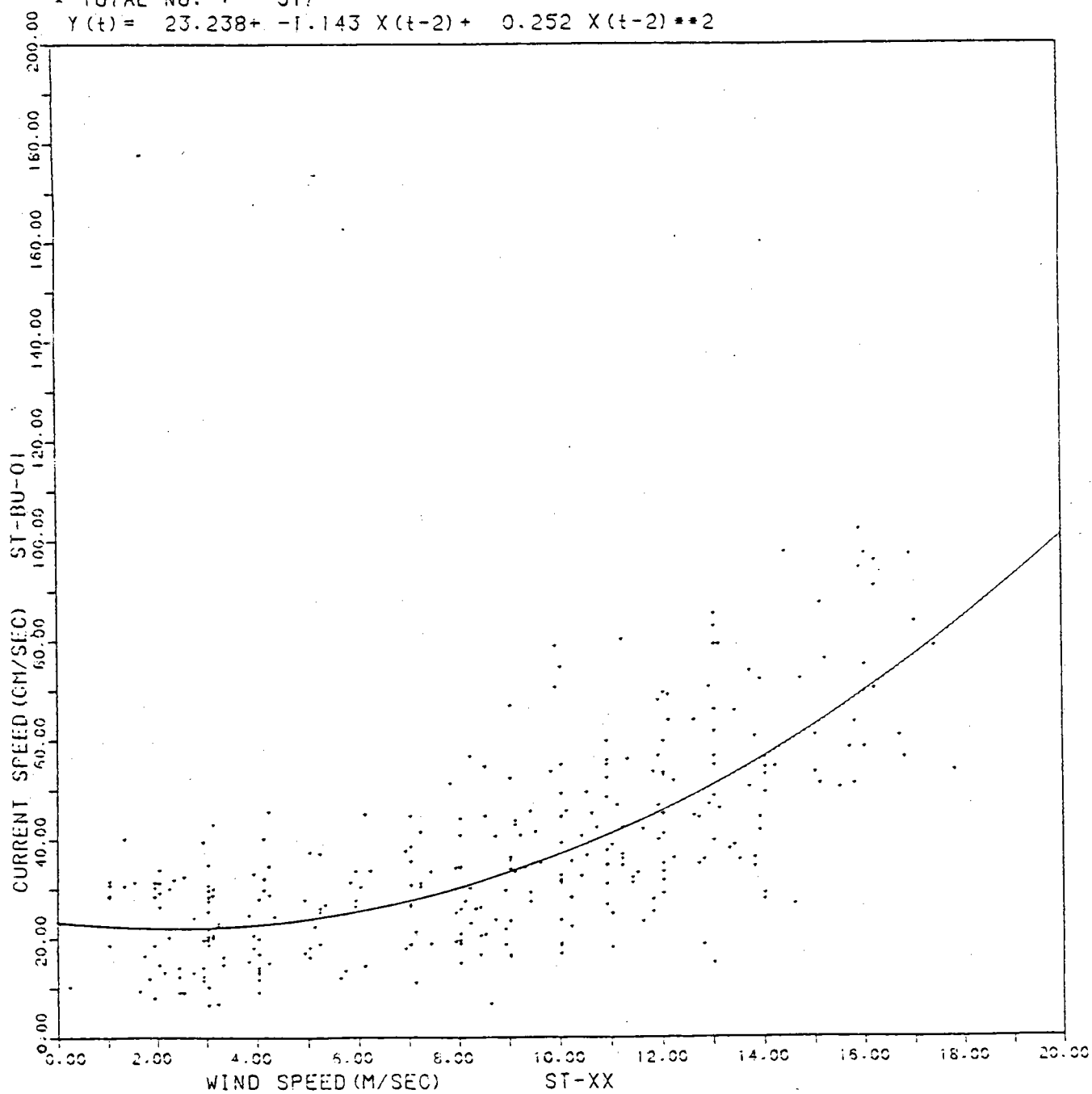


圖 5 - 3 ③ 台中港港口流速與風速關係

* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/01/16/15: 0-86/01/29/19:0
 * TOTAL NO. : 317

$$Y(t) = 24.949 + -2.245 X(t-1) + 0.279 X(t-1)**2$$

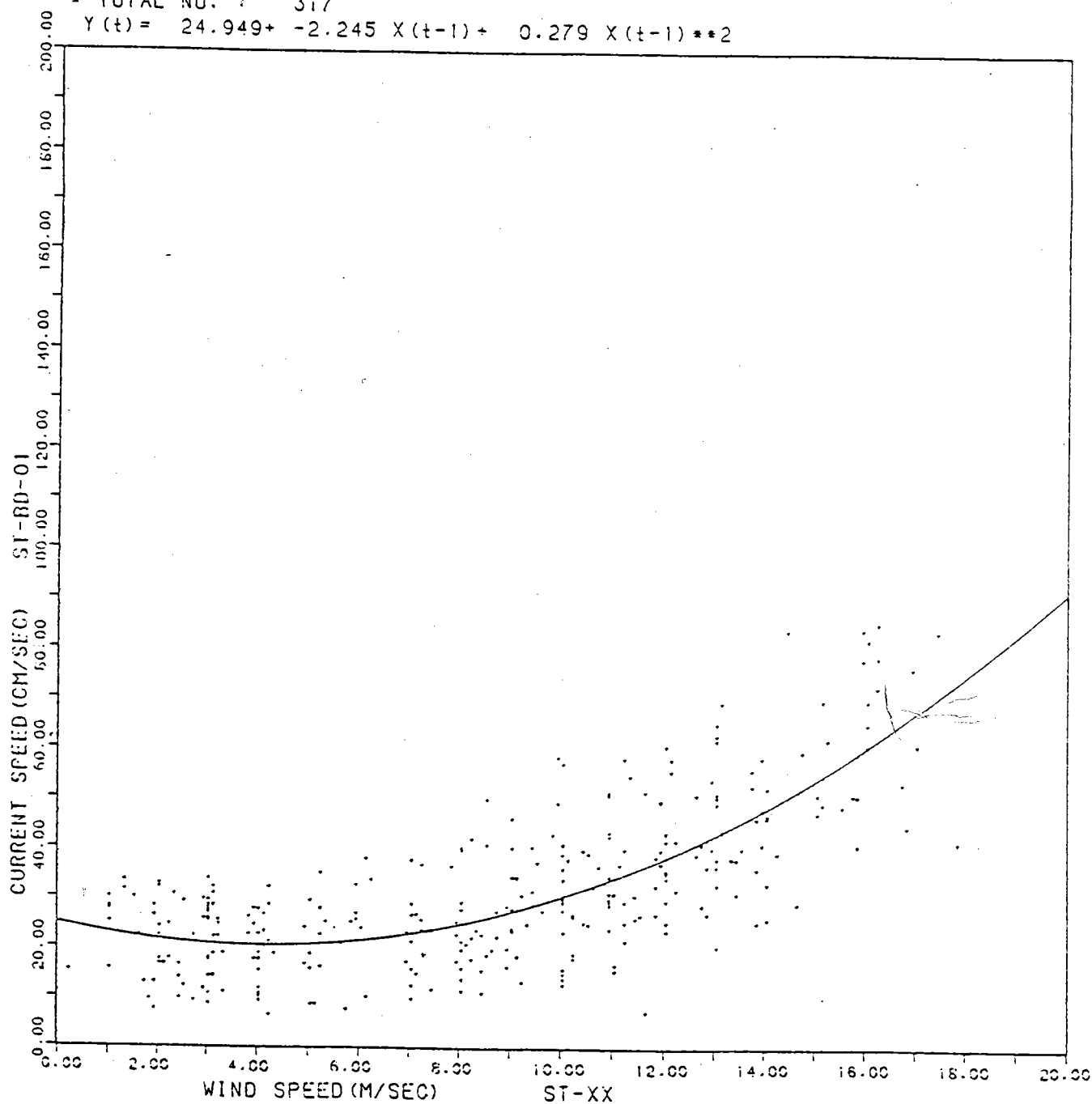


圖 5 - 3 ② 台中港港口流速與風速關係

計波高超過概率如圖 5-4。65年郭金棟教授根據 61 年 1 月至 64 年 5 月實測波浪資料統計各月份示性波高超過率如表 5-1。年平均波高超過率如圖 5-5。本所統計 63 年全年波浪資料，波高與週期分佈如表 5-2。波高超過率如圖 5-6。綜合上述資料顯示，台中港外海波高超過 2.5m 發生概率約為 10%。

60年 11 月及 63年 10 月之波高與週期關係，迴歸線方程式分別為：

$$T_s = 5.284 + 0.694 H_s$$

$$T_s = 4.582 + 0.76 H_s$$

由此可得台中港外海波高為 2 m 時，其週期約為 6 至 7 秒。

(三)風速

台中港工程局為了解台中港外海風速，於 60年 9 月在北防波堤附近興建完成 24 m 高風速觀測塔。60 年 10 月於塔上安裝風速計觀測外海風速。台中港北防波堤 24m 高風速 V24 與原台中港梧棲測候站 10 m 高風速 V10 之關係，經採用 61 年全年風速資料迴歸，其關係式為：

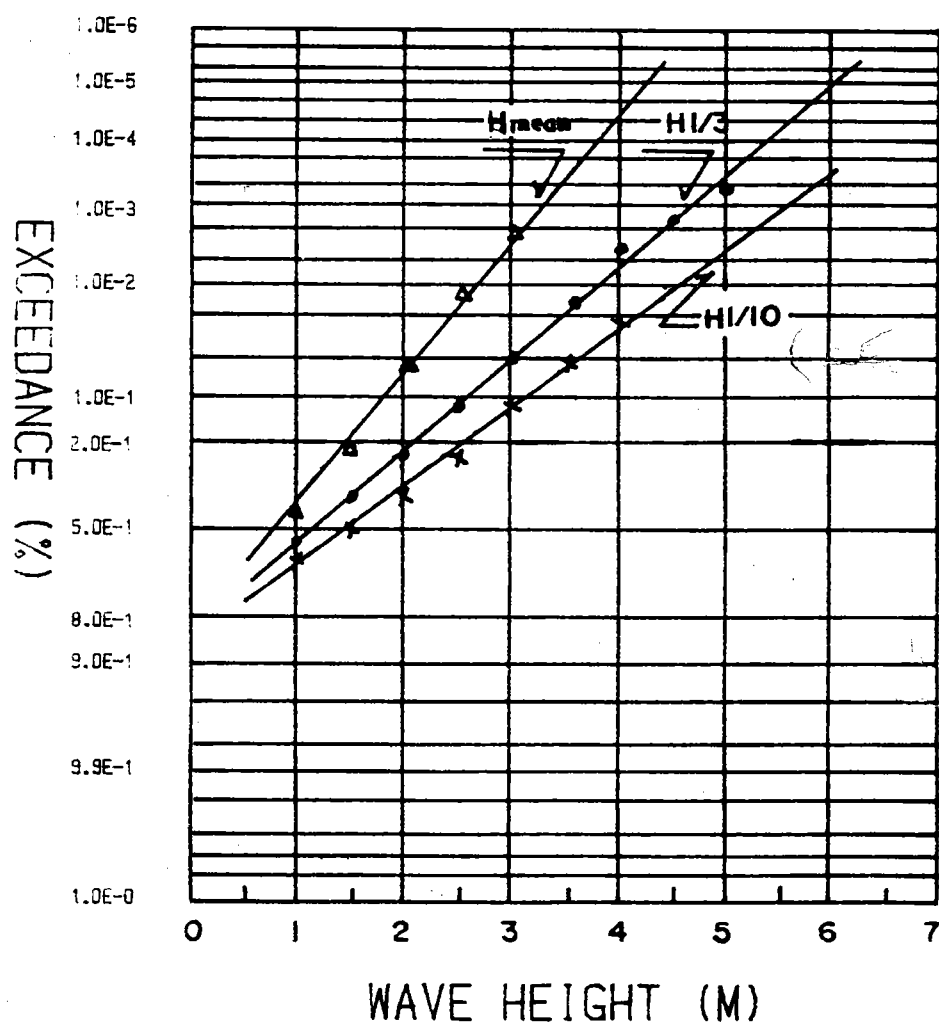


圖 5 - 4 台中港外海波高與超過率關係 (61 年)

表 5 - 1 61 年至 64 年實測波高統計特性

65 噸位球

月 H $\frac{1}{3}$ cm	1	2	3	4	5	6	7	8	9	10	11	12	年平均	合計
0-49	2.58	10.42	18.30	32.54	29.0	29.43	43.62	33.25	23.76	10.53	3.82	1.77	19.99	
50-74	5.20	11.03	10.05	17.99	31.70	38.88	31.37	36.59	18.30	9.09	5.23	1.82	18.10	
75-99	7.23	6.52	9.06	16.25	16.67	20.33	15.98	11.93	17.89	12.37	7.36	4.78	12.20	
100-124	10.89	7.99	11.15	11.66	10.46	9.52	5.55	7.70	14.54	10.30	11.39	11.42	10.21	
125-149	15.15	10.13	16.0	7.91	4.60	1.33	2.15	4.59	11.89	9.62	13.68	17.14	9.68	
150-199	33.01	26.25	24.81	8.21	6.21	0.44	1.42	3.34	12.10	18.53	24.41	31.38	15.83	
200-249	15.92	19.31	9.12	3.73	1.47	0	0	1.54	1.42	14.23	22.41	17.68	8.89	
250-299	6.90	7.61	1.25	1.00	0	0	0	0.56	0.09	10.01	9.75	9.48	3.89	
300-349	3.00	0.60	0.27	0.48	0	0	0	0.56	0	3.49	1.74	1.99	1.01	
350-399	0.14	0.15	0	0.32	0	0	0	0	0	1.59	0.44	0.45	0.26	
400 以上	0	0	0	0	0	0	0	0	0	0.21	0	0.18	0.03	
記錄年代	61 64	61 64	61 64	61 64	61 62 64	61 63	61 63	61 63	61 62 63	61 62 63	61 63	61 62 63	100.09	

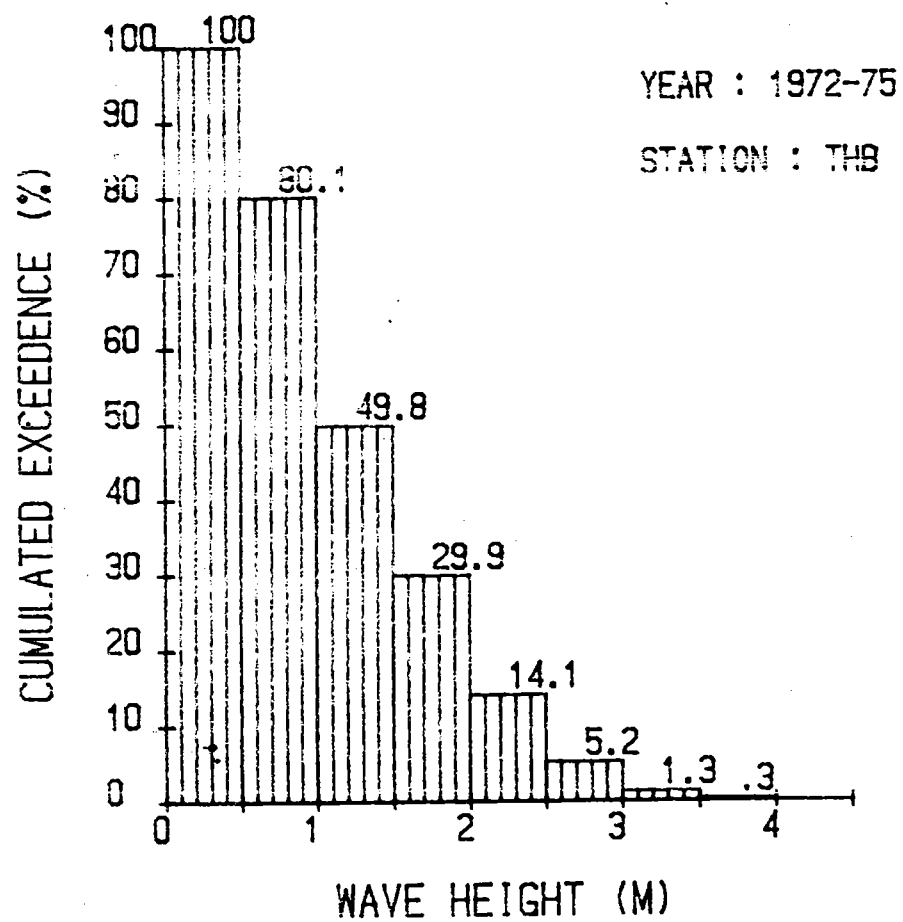


圖 5 - 5 年平均波高與超過率關係 (61 - 64 年)

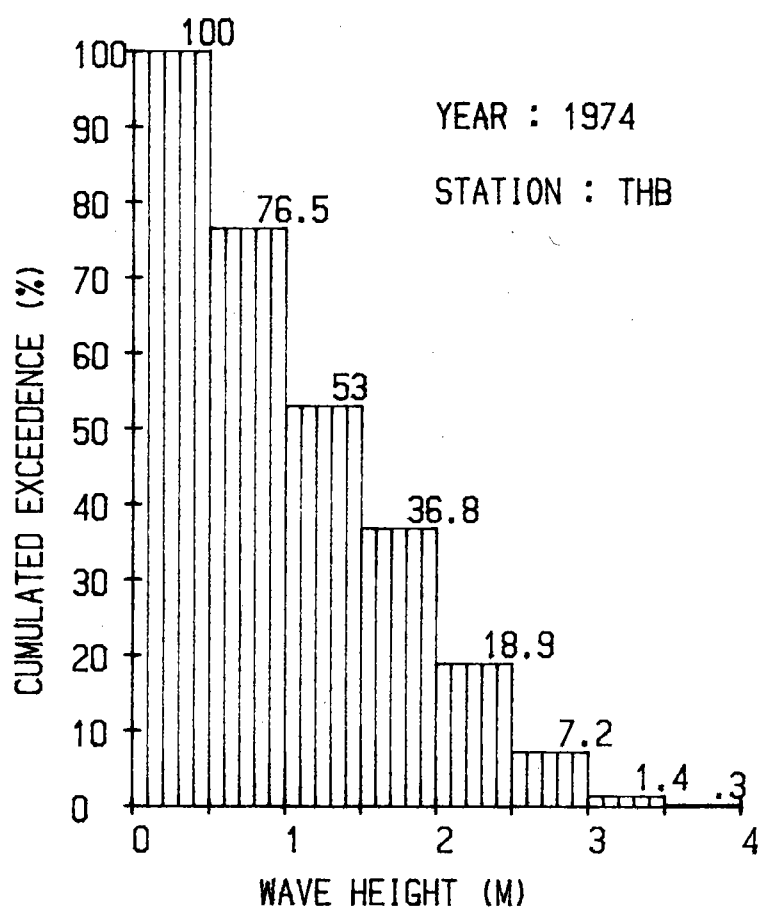


圖 5 - 6 63 年波高與累積概率關係

表 5-2 63 年全年波高週期分佈

DATA: EBARY.WAVE TIC74.DAT: 5

9-AUG-1988 05:58

	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	>5.0
5.0	530	337	99	26	9	3	0	0	0	0	0
6.0	224	298	344	225	49	20	2	0	0	0	0
7.0	88	48	148	359	266	64	8	0	0	0	0
8.0	18	17	6	48	107	104	15	1	0	0	0
10.0	5	12	0	2	1	19	16	8	1	0	0
14.0	0	0	0	0	0	0	0	1	0	0	0
>14.0	0	0	0	0	0	0	0	0	0	0	0
H(1/3)											
SEC	866	868	597	660	432	212	41	10	1	0	0
	23.49	23.54	16.13	17.90	11.72	5.75	1.11	0.27	0.03	0.00	%
TOTAL DATA NO. = 3687											

DATA: EBARY.WAVE TIC74S.DAT: 5

9-AUG-1988 05:58

	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	>5.0
5.0	455	285	54	15	4	0	0	0	0	0	0
6.0	172	206	118	60	12	8	2	0	0	0	0
7.0	75	37	44	53	49	17	4	0	0	0	0
8.0	18	17	1	7	22	15	5	1	0	0	0
10.0	6	12	0	0	0	4	5	0	1	0	0
14.0	0	0	0	0	0	0	0	1	0	0	0
>14.0	0	0	0	0	0	0	0	0	0	0	0
H(1/3)											
SEC	725	725	217	135	87	44	17	2	1	0	0
	37.15	37.10	11.11	6.91	4.45	2.25	0.97	0.10	0.05	0.00	%
TOTAL DATA NO. = 1954											

DATA: EBARY.WAVE TIC74W.DAT: 5

9-AUG-1988 05:57

	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	>5.0
5.0	75	52	45	11	5	3	0	0	0	0	0
6.0	52	92	226	165	37	12	0	0	0	0	0
7.0	13	11	104	306	217	49	4	0	0	0	0
8.0	0	0	5	41	85	89	9	0	0	0	0
10.0	0	0	0	2	1	15	11	8	0	0	0
14.0	0	0	0	0	0	0	0	0	0	0	0
>14.0	0	0	0	0	0	0	0	0	0	0	0
H(1/3)											
SEC	140	142	380	525	345	168	24	9	0	0	0
	8.08	8.20	21.94	30.31	19.92	9.70	1.39	0.46	0.00	0.00	%
TOTAL DATA NO. = 1732											

$$\log V_{10} = 1.075 \log V_{24} - 0.19$$

上述迴歸公式適用範圍為 $2 \text{ m/sec} < V_{24} < 25 \text{ m/sec}$

71 年曾哲茂研究「台中港東北季風期間風、浪特性分析及簡易波浪預報模式之推導」，利用 66 及 67 兩年冬季風速資料分析，獲得冬季台中港每日最小風速超過 15 m/sec 發生累積概率僅為 2.5%，同時發現每日夜間 11 時至次日凌晨 3 時發生最小風速之概率為 66.7%，每日上午 11 時至下午 4 時發生日最大風速之概率為 58.8%。顯示台中港外海日夜間風速變化極為顯著。

74 年台中港務局「台中港進泊十五萬噸級船舶可行性研究報告」，統計 61 年 1 月至 69 年 12 月台中港北堤 24m 高風速分佈如表 5-3。風速超過 10 m/sec 累積概率為 37.68%，風速超過 15 m/sec 之累積概率為 13.34%，由於此項統計係不分月份，所有資料等權加以統計。因觀測期間風速計偶爾發生故障，未能獲得全年完整之資料，而短缺之資料未能均勻分佈於冬、夏兩季，可能集中於冬季或夏季，使冬季資料點數大於或少於夏季資料點數，則可能造成統計偏差。為避免此種誤差，統計時應逐年求得月平均值，根據每年月平均值計算觀測期間每月平均值，再由統計期間每月平值求年平均值。經採上述方法求得 61 年 1 月至 69 年 12 月台中港外海風速分佈如表 5-4。根

表 5-3 台中港北堤風速、風向分佈統計表

地點：北堤(4M高)

61年1月至69年12月

風速 (m/s)	風向	風 向																合計
		N	NNE	NE	ENE	E	ESE	S E	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	C
0.1—4.9	次數	1930	2830	2484	978	750	576	1180	1815	2605	1149	843	563	786	607	984	1323	675
	百分比	2.69	3.94	3.46	1.36	1.04	0.80	1.64	2.53	3.63	1.60	1.17	0.78	1.09	0.85	1.37	1.84	0.94
5.0—9.9	次數	2591	6847	3737	178	42	22	159	999	3086	1185	1214	758	599	238	351	677	22683
	百分比	3.61	9.53	5.20	0.25	0.06	0.03	0.22	1.39	4.30	1.65	1.69	1.06	0.83	0.33	0.49	0.94	31.58
10.0—14.9	次數	1126	7550	7441	6	3		9	105	320	400	377	63	10	1	13	57	17481
	百分比	1.57	10.51	10.36	0.01	0		0.01	0.15	0.45	0.56	0.52	0.09	0.01	0	0.02	0.08	24.34
15.0—19.9	次數	363	5456	1322				1	2	28	51	28		3	2	4	12	7273
	百分比	0.51	7.60	1.84				0	0	0.04	0.07	0.04		0	0	0.01	0.02	10.13
20.0—24.9	次數	78	1659	279						7	7	1			2	4	8	2048
	百分比	0.11	2.31	0.39						0.01	0.01	0			0	0.01	0.01	2.85
25.0—29.9	次數	5	183	17					1	2							4	212
	百分比	0.01	0.25	0.02					0	0							0.01	0.29
30.0以上	次數	2	51															53
	百分比	0	0.07															0.07
合 計	次數	6095	24576	15280	1162	795	598	1349	2922	6048	2792	2463	1384	1402	850	1356	2081	675
	百分比	8.48	34.21	21.27	1.62	1.11	0.83	1.88	4.07	8.42	3.89	3.43	1.93	1.95	1.18	1.89	2.9	0.94

74年合計 (長沙路)

表 5-4 台中港北堤風速分佈統計

風速：m/sec

年度 風速 月 份	61 - 64				65 - 69				61 - 69						
	0-4.9	5.0- 9.9	10.0- 14.9	15.0- 19.9	20≤	0-4.9	5.0- 9.9	10.0- 14.9	15.0- 19.9	20≤	0-4.9	5.0- 9.9	10.0- 14.9	15.0- 19.9	20≤
一	13.3	24.8	25.6	25.9	10.3	19.3	28.9	28.0	19.8	4.1	16.6	27.1	26.9	22.5	6.9
二	17.8	24.8	25.9	23.0	7.2	21.6	30.5	27.1	17.7	3.1	20.2	28.9	26.7	19.7	4.6
三	25.4	28.7	26.9	15.6	3.5	31.7	36.1	22.9	8.3	1.0	29.3	33.3	24.4	11.0	2.0
四	28.2	44.5	17.4	7.1	2.5	38.2	38.6	19.0	3.9	0.3	34.4	40.8	18.4	5.1	1.1
五	35.7	45.1	13.7	4.0	1.1	47.4	38.2	12.3	2.0	0.1	44.1	40.1	12.7	2.6	0.4
六	30.3	47.4	18.4	1.8	0	46.0	48.9	4.8	0.3	0	40.1	48.3	10.6	0.9	0
七	31.5	56.8	10.5	0.8	0.4	51.4	42.2	5.9	0.5	0	42.5	46.7	8.0	0.6	0.2
八	52.2	33.8	10.0	3.1	1.3	49.0	42.3	5.5	2.2	1.0	50.4	38.5	7.5	2.1	1.1
九	54.1	31.2	9.8	4.0	1.2	54.9	23.4	13.1	6.5	2.1	54.6	26.3	11.8	5.5	1.8
十	34.0	27.0	23.0	12.5	3.5	27.8	33.3	22.0	13.2	3.6	29.6	31.5	22.3	13.0	3.6
十一	14.5	25.0	28.0	25.0	8.0	15.2	27.7	30.8	23.7	4.3	15.0	26.9	30.0	24.0	5.4
十二	14.5	22.5	28.0	21.5	13.0	18.7	33.6	28.4	16.8	2.5	17.5	30.4	28.3	18.1	5.5
平均	29.3	34.3	19.8	12.0	4.3	35.1	35.3	18.3	9.6	1.8	32.9	34.9	19.0	10.4	2.7

據統計資料顯示，台中港外海觀測風速有逐年減小之趨勢，為了解此種現象，將 61 年 1 月至 64 年 12 月與 65 年 1 月至 69 年 12 月風速資料分別統計，其結果如表 5-4。風速與累積概率關係如圖 5-7。風速大於 15m/sec 累積概率 61 至 64 年為 16.3%，65 至 69 年為 11.4%。台中港風速觀測資料以 65 至 69 年較為完整，因此可研判台中港外海 24 m 高風速超過 15 m/sec 之累積概率約為 12%。

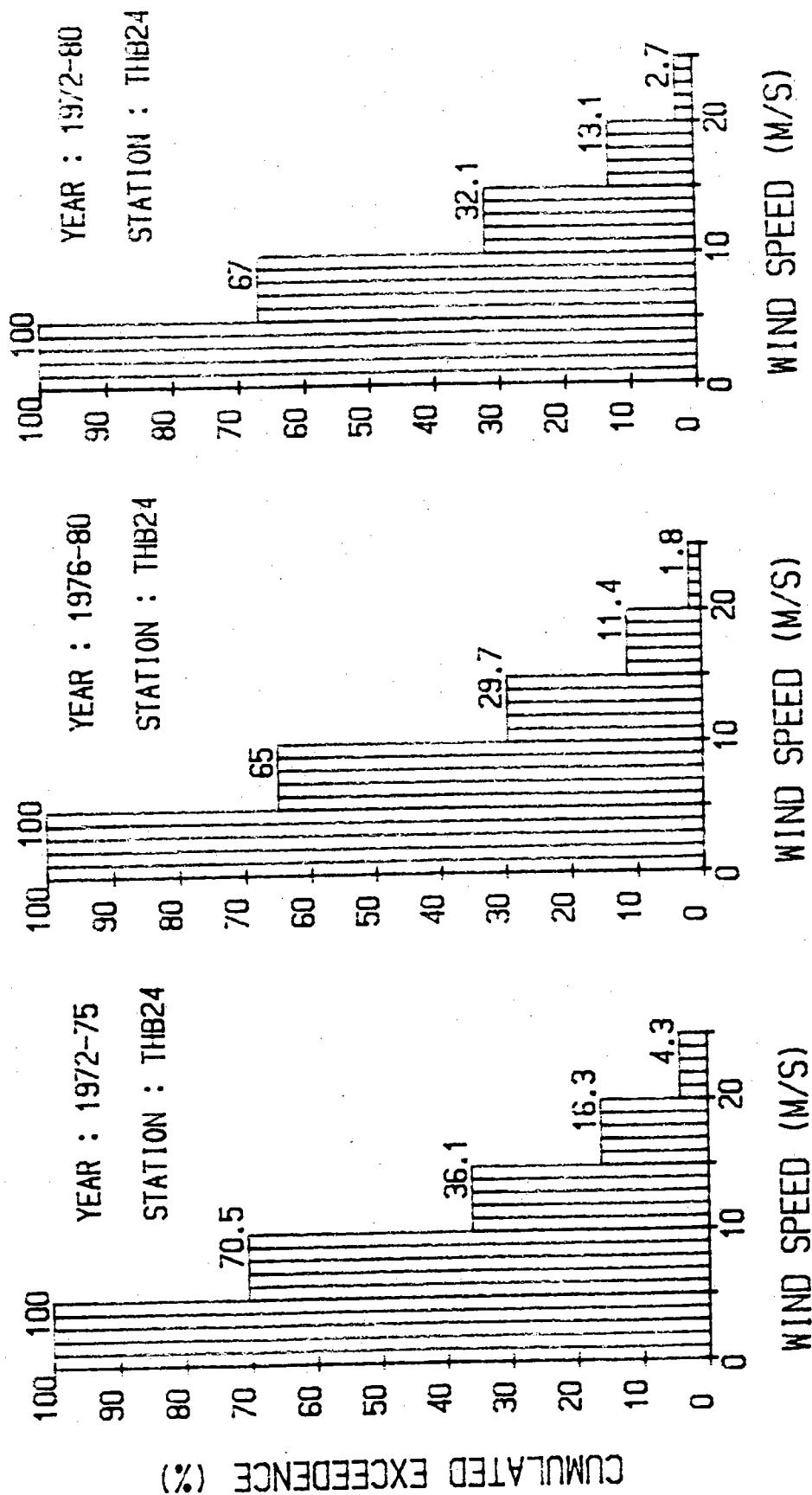


圖 5 - 7 台中港北堤風速與累積概率關係

附 表 I

流速、流向分佈統計表

表 號	時 間	測 站	備 註
I - 1	86/01/15-02/25	BU	
I - 2	86/03/07-04/03	BU	
I - 3	86/04/04-04/23	BU	
I - 4	86/01/16-02/25	BD	
I - 5	86/03/07-04/03	BD	
I - 6	86/04/04-04/23	BD	
I - 7	86/03/11-04/02	C	
I - 8	86/01/29-03/06	D	
I - 9	86/03/08-04/03	D	
I - 10	86/04/08-04/23	D	
I - 11	85/12/27-86/01/18	E	
I - 12	86/01/03-86/01/05	F	
I - 13	86/04/08-04/23	S	
I - 14	86/12/02-87/01/06	BU	
I - 15	87/03/06-03/24	G	
I - 16	87/03/05-03/24	H	

表 I - 1

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECTION AT TAI-CHUNG HARBOUR																						
ST-BU DATE : 86/01/16/15: 0-86/02/25/14:00																						
UNIT : CM/SEC AND DEGREE ---- CURT SPEED (CM/SEC) AND DIRECTION HOURLY MEAN DATA																						
SPEED	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%
DIRECT																						
N	0.0	0.6	0.9	1.7	1.8	2.2	1.8	1.6	0.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.50
NNE	0.1	0.5	0.7	0.6	1.5	1.9	2.5	2.0	0.7	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.46
NE	0.0	0.5	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.19
ENE	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52
E	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52
ESE	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73
ES	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10
SSE	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52
S	0.1	0.4	0.6	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.77
SSW	0.1	0.7	1.1	1.1	2.6	3.6	4.0	2.2	3.1	2.4	2.0	1.1	1.0	1.5	0.7	0.8	0.2	0.1	0.5	0.2	0.0	29.27
SW	0.0	0.7	1.1	3.5	1.9	2.6	2.5	2.1	2.3	2.4	2.6	2.2	1.6	2.0	0.9	1.7	1.8	1.3	0.4	0.4	0.0	33.96
WSW	0.1	0.5	0.6	0.9	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.02
W	0.0	0.1	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94
WNW	0.0	0.3	0.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04
HW	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52
NNW	0.0	0.2	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94
N	1.0	6.5	7.9	9.5	9.1	11.4	10.7	7.8	6.8	5.6	4.9	3.4	2.7	3.4	1.7	2.5	2.0	1.4	0.9	0.6	0.0	100.00
TOTAL NO. PAIRS OF DATA : 960																						
MEAN OF CURT SPEED : 36.45																						
MAX OF CURT SPEED : 101.78																						
MIN OF CURT SPEED : 1.40																						
CORRU RATIO OF CURT SPEED : 1.56																						
MOST LOCATED AT CURT SPEED INTERVAL (25.00, 30.00) IS 11.35%																						
MEAN OF CURT DIRECTION : 173.76																						
MAX OF CURT DIRECTION : 351.03																						
MIN OF CURT DIRECTION : 0.37																						
CORRU RATIO OF CURT DIRECTION : 1.32																						
MOST LOCATED AT CURT DIRECTION INTERVAL (225.00, 247.50) IS 33.96%																						
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 67.93																						
STANDARD DEVIATION OF CURT DIRECTION : 92.94																						
STANDARD DEVIATION OF CURT SPEED : 21.35																						
DC VALUE OF CURT DIRECTION : -15.82																						
DC VALUE OF CURT SPEED : -0.89																						

表 I - 2

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOUR																						
UNIT : CM/SEC AND DEGREE ---- CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA																						
DIRECT	SPEED	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0
N		0.0	0.3	0.9	4.2	2.5	2.9	2.3	1.4	0.5	0.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE		0.0	0.2	1.1	4.9	7.2	6.3	6.8	5.4	3.2	1.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE		0.3	0.5	1.5	2.9	1.4	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE		0.0	0.2	1.1	1.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E		0.0	0.2	0.8	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE		0.0	0.2	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ES		0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE		0.0	0.5	0.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S		0.0	0.2	0.3	1.5	0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW		0.0	0.5	0.5	2.2	1.4	2.3	1.5	2.3	1.1	1.4	0.8	0.9	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW		0.0	0.2	0.6	1.1	0.6	1.1	0.6	0.3	0.2	0.0	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW		0.0	0.2	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W		0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW		0.0	0.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW		0.0	0.3	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW		0.0	0.2	1.4	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N		0.3	3.7	11.7	22.2	13.9	13.4	12.0	9.4	4.9	3.4	2.0	1.5	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL NO. PAIRS OF DATA : 649		LOST NO. PAIRS OF DATA : 0 (0.00 %)																				
MEAN OF CURT SPEED : 26.53		VARIANCE OF CURT SPEED : 152.46																				
MAX OF CURT SPEED : 69.46		STANDARD DEVIATION OF CURT SPEED : 12.36																				
MIN OF CURT SPEED : 0.78		: 219.07 AT TIME : 1985. 3.23. 8: 0																				
CORRU RATIO OF CURT SPEED : 1.54		: 60.18 AT TIME : 1985. 3.20. 7: 0																				
MOST LOCATED AT CURT SPEED INTERVAL (15.00, 20.00) IS 22.194		DC VALUE OF CURT SPEED : -2.22																				
MEAN OF CURT DIRECT : 102.10		VARIANCE OF CURT DIRECT : 9826.52																				
MAX OF CURT DIRECT : 359.98		STANDARD DEVIATION OF CURT DIRECT : 99.13																				
MIN OF CURT DIRECT : 2.85		: 24.97																				
CORRU RATIO OF CURT DIRECT : 1.26		: 18.46																				
MOST LOCATED AT CURT DIRECT INTERVAL (22.50, 45.00) IS 35.58X		DC VALUE OF CURT DIRECT : -15.98																				
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 57.23		IT'S NO. : 33 (5.08 %)																				

表 I - 3

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOUR																							ST-BU DATE : 86/04/04/13: 0-86/04/23/11:00	
UNIT : CM/SEC AND DEGREE -----		CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA																						
SPEED		0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%	
DIRECT																								
N		0.0	0.2	2.0	3.1	2.2	4.8	4.2	1.5	1.8	2.2	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.52	
NNE		0.0	0.0	0.7	3.7	2.9	3.3	4.2	3.7	5.3	3.5	4.0	3.3	1.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.04	
NE		0.0	0.0	0.7	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.54	
ENE		0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	
E		0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44	
ESE		0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.22	
ES		0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	
SSE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
S		0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44	
SSW		0.2	0.2	0.4	0.9	0.7	0.2	0.2	0.7	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.4	0.0	6.81	
SW		0.0	0.0	1.1	2.0	2.4	0.9	0.9	0.4	0.2	0.7	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.89	
WSW		0.0	0.4	1.3	1.5	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.84	
W		0.0	0.2	0.0	1.3	1.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.52	
WNW		0.0	0.2	0.9	1.1	0.9	1.3	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.27	
NW		0.0	0.0	1.1	0.4	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.64	
NNW		0.0	0.2	1.1	0.7	1.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.52	
N		0.4	1.8	10.3	15.6	13.0	13.0	10.3	6.6	7.9	6.6	5.9	4.4	1.5	0.7	0.4	0.2	0.2	0.2	0.4	0.0	0.0	100.00	
TOTAL NO. PAIRS OF DATA : 455																								
MEAN OF CURT SPEED : 31.51																								
MAX OF CURT SPEED : 94.05																								
MIN OF CURT SPEED : 3.90																								
CORNU RATIO OF CURT SPEED : 1.52																								
MOST LOCATED AT CURT SPEED INTERVAL (15.00, 20.00) IS 15.604																								
MEAN OF CURT DIRECT : 116.38																								
MAX OF CURT DIRECT : 359.63																								
MIN OF CURT DIRECT : 0.35																								
CORNU RATIO OF CURT DIRECT : 1.14																								
MOST LOCATED AT CURT DIRECT INTERVAL (22.50, 45.00) IS 36.044																								
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 59.14																								
LOST NO. PAIRS OF DATA : 0 (0.00 %)																								
STANDARD DEVIATION OF CURT SPEED : 15.63																								
1 219.95 AT TIME : 1986. 4.11.21: 0																								
: 183.55 AT TIME : 1986. 4.21.18: 0																								
DC VALUE OF CURT SPEED : -2.97																								
STANDARD DEVIATION OF CURT DIRECT : 118.87																								
DC VALUE OF CURT DIRECT : -27.22																								
64 (14.07 %)																								

表 I - 4

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOUR ST-80 DATE : 86/01/16/15: 0-86/02/25/14:00

UNIT : CM/SEC AND DEGREE ---- CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA

DIRECT	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%
N	0.2	0.5	2.0	1.0	2.0	2.4	1.4	1.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	11.35
NNE	0.0	0.0	0.1	1.9	2.5	2.8	2.0	1.1	0.8	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.98
NE	0.0	0.1	0.4	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04
ENE	0.1	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.73
E	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.21
ESE	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52
ES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
SSE	0.5	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04
S	0.4	0.3	0.6	0.3	0.7	0.2	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.02
SSH	0.6	0.9	0.9	1.4	1.9	2.6	1.8	2.5	1.5	0.7	0.3	0.8	0.3	0.2	0.2	0.1	0.4	0.0	0.2	0.0	0.0	17.60
SH	0.4	0.7	1.1	2.5	3.8	4.7	3.8	3.4	3.2	4.0	2.6	2.1	2.8	2.8	0.8	1.0	0.9	0.9	0.6	1.5	0.0	43.75
HSH	0.2	0.5	0.4	0.8	0.8	0.7	0.2	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.17
H	0.2	0.1	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83
HNW	0.1	0.5	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15
NW	0.0	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94
NNW	0.0	0.4	0.2	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.67

3.2 5.6 6.5 9.0 12.3 14.0 5.3 8.8 5.0 5.3 3.5 3.0 3.2 3.1 1.0 1.3 1.4 0.9 0.8 1.8 100.00

TOTAL NO. PAIRS OF DATA : 920
 MEAN OF CURT SPEED : 35.79
 MAX OF CURT SPEED : 116.72
 MIN OF CURT SPEED : 1.78
 CORNU RATIO OF CURT SPEED : 1.67
 MOST LOCATED AT CURT SPEED : 25.00, 30.00
 MEAN OF CURT DIRECT : 180.35
 MAX OF CURT DIRECT : 359.98
 MIN OF CURT DIRECT : 0.59
 CORNU RATIO OF CURT DIRECT : 1.41
 MOST LOCATED AT CURT DIRECT : 225.00, 247.50
 MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 49.49
 LOST NO. PAIRS OF DATA : 0 (0.00 %)
 VARIANCE OF CURT SPEED : 463.81
 IT'S CURT DIRECT : 224.87 AT TIME : 1986. 2. 7. 7: 0
 IT'S CURT DIRECT : 121.91 AT TIME : 1986. 2. 23. 7: 0
 SKEWNESS OF CURT SPEED : 2.27
 DC VALUE OF CURT SPEED : 6.27
 VARIANCE OF CURT DIRECT : 8911.39
 IT'S CURT SPEED : 29.87
 IT'S CURT SPEED : 34.40
 SKEWNESS OF CURT DIRECT : -1.47
 DC VALUE OF CURT DIRECT : -10.50
 STANDARD DEVIATION OF CURT DIRECT : 93.87
 IT'S NO. : 193 (20.10 %)

表 1

APPROPRIATE DISTRIBUTION OF CURY SPEDD AND DIRECT AT TAI-CHUNG HAROUR

ST-80 DATE : 86/03/07/13: 0-86/04/03/13:00

UNIT : CM/SEC AND DEGREE ---- CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA

[illegible]

DIRECT
N
0.0 0.2 0.8 0.9 1.5 2.5 3.5 3.2 2.9 1.1 0.2 0.5 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0
NNE
0.0 0.0 0.3 1.1 1.8 4.0 3.7 3.5 3.7 2.6 2.5 1.1 1.5 0.5 0.0 0.0 0.0 0.0 0.0
NE
0.0 0.0 0.5 1.7 2.9 1.8 2.5 0.5 0.5 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ENE
0.0 0.0 0.2 0.6 1.4 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
E
0.0 0.0 0.2 0.5 0.5 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ESE
0.0 0.2 0.2 0.3 0.9 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ES
0.0 0.0 0.0 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
SSE
0.0 0.0 0.0 0.0 0.0 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
S
0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
SSW
0.0 0.0 0.0 0.0 0.2 0.5 0.0 0.0 0.2 0.6 0.3 0.3 0.5 0.5 0.3 0.0 0.0 0.0 0.0
SW
0.0 0.0 0.3 0.2 0.8 0.9 1.8 1.9 2.0 2.0 1.1 0.8 0.8 0.9 0.2 0.0 0.0 0.0 0.0
WSW
0.0 0.0 0.2 0.6 0.9 0.5 1.8 0.2 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
W
0.0 0.0 0.0 1.4 0.8 1.2 1.1 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
WNW
0.0 0.0 0.0 1.2 1.7 2.3 0.3 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
NW
0.0 0.0 0.0 0.5 1.1 1.2 1.1 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
NNW
0.0 0.2 0.2 0.6 1.7 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N
17.41
26.35
10.48
2.31
1.39
1.68
0.31
0.31
0.15
3.24
13.56
4.47
4.62
6.16
4.16
3.39

TOTAL NO. PAIRS OF DATA :	649	LOST NO. PAIRS OF DATA :	0 (0.00 %)
MEAN OF CURT SPEED :	35.05	VARIANCE OF CURT SPEED :	171.04
MAX OF CURT SPEED :	75.86	STANDARD DEVIATION OF CURT SPEED :	13.08
MIN OF CURT SPEED :	6.92	IT'S CURT DIRECT :	233.81
CORNU RATIO OF CURT SPEED :	1.59	AT TIME : 1986. 3.23. 8: 0	
MOST LOCATED AT CURT SPEED :	130.88	IT'S CURT DIRECT :	343.15
MEAN OF CURT DIRECT :	359.32	AT TIME : 1986. 3.11.12: 0	
MAX OF CURT DIRECT :	0.32	DC VALUE OF CURT SPEED :	1.24
MIN OF CURT DIRECT :	1.13	STANDARD DEVIATION OF CURT DIRECT :	119.39
CORNU RATIO OF CURT DIRECT :	1.13	DC VALUE OF CURT DIRECT :	-27.82
MOST LOCATED AT CURT DIRECT :	22.50	IT'S NO. :	89 (13.71 %)
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC :	59.23		

表 I - 6

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOUR ST-80 DATE : 86/04/04/13: 0-86/04/23/11:00

UNIT : CM/SEC AND DEGREE ----- CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA

DIRECT	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%
N	0.0	0.7	1.8	2.4	1.8	1.8	0.4	0.4	0.0	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.11
NNE	0.0	1.1	2.0	3.3	5.7	7.7	7.0	7.3	7.5	3.3	1.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.81
NE	0.0	0.2	1.3	2.2	1.5	1.8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.25
ENE	0.0	0.2	0.0	1.5	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.84
E	0.0	0.0	0.0	0.2	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66
ESE	0.0	0.0	0.2	0.7	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32
ES	0.0	0.4	0.4	0.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.98
SSE	0.0	0.0	0.4	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.72
S	0.0	0.2	1.3	1.8	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.18
SSH	0.0	0.0	0.4	1.5	1.3	1.1	1.1	0.4	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	7.03
SW	0.0	0.0	0.0	2.6	2.0	2.0	0.2	0.4	0.2	1.1	0.2	0.2	0.2	0.4	0.2	0.2	0.4	0.0	0.0	0.0	0.0	10.33
WSW	0.0	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.62
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
WNW	0.0	0.2	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10
NW	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66
NNW	0.0	1.1	0.2	1.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.30
N	0.0	4.4	9.0	20.0	15.6	15.6	8.8	8.8	7.9	5.3	2.2	0.7	0.7	0.4	0.2	0.4	0.0	0.0	0.0	0.0	0.0	100.00

TOTAL NO. PAIRS OF DATA : 455
 MEAN OF CURT SPEED : 27.50
 MAX OF CURT SPEED : 76.71
 MIN OF CURT SPEED : 5.47
 CORNU RATIO OF CURT SPEED : 1.56
 MOST LOCATED AT CURT SPEED INTERVAL (15.00, 20.00) IS 20.00%
 MEAN OF CURT DIRECT : 97.17
 MAX OF CURT DIRECT : 359.28
 MIN OF CURT DIRECT : 2.10
 CORNU RATIO OF CURT DIRECT : 1.31
 MOST LOCATED AT CURT DIRECT INTERVAL (22.50, 45.00) IS 46.81%
 MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 59.16
 LOST NO. PAIRS OF DATA : 0 (0.00 %)
 VARIANCE OF CURT SPEED : 160.05
 IT'S CURT DIRECT : 227.46 AT TIME : 1986. 4.12. 0: 0
 IT'S CURT DIRECT : 150.99 AT TIME : 1986. 4.22. 1: 0
 SKEWNESS OF CURT SPEED : 1.64
 CC VALUE OF CURT SPEED : -0.61
 STANDARD DEVIATION OF CURT SPEED : 12.65
 STANDARD DEVIATION OF CURT DIRECT : 96.51
 DC VALUE OF CURT DIRECT : -12.73
 IT'S NO. : 21 (4.62 %)

表 I - 7

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOUR		ST-C		DATE : 86/03/11/11: 0-86/04/02/01:00	
UNIT : CM/SEC AND DEGREE		CURT SPEED (CM/SEC)		AND DIRECT HOURLY MEAN DATA	
SPEED		0.0 5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0 45.0 50.0 55.0 60.0 65.0 70.0 75.0 80.0 85.0 90.0 95.0 100.0		X	
DIRECT		0.0 5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0 45.0 50.0 55.0 60.0 65.0 70.0 75.0 80.0 85.0 90.0 95.0 100.0		X	
N	0.0 0.6 0.4 0.4 0.4 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	1.33			
NNE	0.0 0.6 1.3 0.6 1.2 1.2 1.3 0.6 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	6.94			
NE	0.2 0.6 1.9 1.0 0.8 0.6 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5.78			
ENE	0.0 0.2 0.6 1.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.12			
E	0.0 0.0	0.00			
ESE	0.0 0.0	0.00			
ES	0.0 0.0	0.00			
SSE	0.0 0.0	0.00			
S	0.2 0.0	0.19			
SSW	0.0 0.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.39			
SW	0.0 0.0 0.2 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.58			
WSW	0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.15			
W	0.2 0.2 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.77			
WNW	0.0 0.0 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.35			
NW	0.0 0.0 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.77			
NNW	0.0 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.39			
N	0.6 2.3 6.2 3.9 2.7 1.7 1.9 1.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	20.42			

TOTAL NO. PAIRS OF DATA : 519
 MEAN OF CURT SPEED : 18.63
 MAX OF CURT SPEED : 42.95
 MIN OF CURT SPEED : 1.85

CORNUS RATIO OF CURT SPEED : 1.50
 MOST LOCATED AT CURT SPEED : 10.00, 15.00 IS 6.114
 MEAN OF CURT DIRECT : 86.70
 MAX OF CURT DIRECT : 356.93
 MIN OF CURT DIRECT : 6.23

CORNUS RATIO OF CURT DIRECT : 1.82
 MOST LOCATED AT CURT DIRECT : 22.50, 45.00 IS 6.544
 MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 0.00

LAST NO. PAIRS OF DATA : 413 (79.58 %)
 VARIANCE OF CURT SPEED : 81.41
 IT'S CURT DIRECT : 37.12 AT TIME : 1986. 3.13. 9: 0
 IT'S CURT DIRECT : 196.08 AT TIME : 1986. 3.11.22: 0
 SKENESS OF CURT SPEED : 1.11
 DC VALUE OF CURT SPEED : -4.51

VARIANCE OF CURT DIRECT : 8911.67
 IT'S CURT SPEED : 7.02
 IT'S CURT SPEED : 9.14
 SKENESS OF CURT DIRECT : 4.28
 DC VALUE OF CURT DIRECT : 16.17

STANDARD DEVIATION OF CURT DIRECT : 94.40
 STANDARD DEVIATION OF CURT SPEED : 9.02

0 (0.00 %)

0 (0.00 %)

0 (0.00 %)

0 (0.00 %)

0 (0.00 %)

0 (0.00 %)

0 (0.00 %)

0 (0.00 %)

0 (0.00 %)

表 I - 8

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECTION AT TAI-CHUNG HARBOUR ST-0 DATE : 86/01/29/14; 0-86/03/06/16:00

UNIT : CM/SEC AND DEGREE ----- CURT SPEED (CM/SEC) AND DIRECTION HOURLY MEAN DATA

DIRECT	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%
N	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.35
NNE	0.2	0.5	0.2	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96
NE	2.9	1.2	1.8	3.7	2.4	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.73
ENE	0.1	0.3	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15
E	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.35
ESE	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55
ES	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.12
SSE	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.12
S	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.23
SSH	0.2	0.5	1.3	1.5	3.7	3.3	3.8	3.6	2.5	2.9	5.4	4.6	1.4	1.8	1.8	1.0	1.3	0.5	0.7	0.0	0.0	41.98
SW	1.4	3.0	3.3	2.8	2.1	2.1	1.8	1.0	0.5	0.1	1.0	1.0	0.6	0.5	0.0	0.2	0.2	0.0	0.0	0.0	0.0	22.95
WSW	0.0	0.6	0.5	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96
W	0.0	0.2	0.5	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.15
WNW	0.1	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.92
NN	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.46
NNW	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.65
N	5.5	7.9	9.0	9.9	10.1	7.4	5.8	4.5	3.1	3.0	4.5	5.7	2.0	2.4	1.8	1.3	1.5	0.6	0.7	0.0	0.0	88.70

TOTAL NO. PAIRS OF DATA : 867
 MEAN OF CURT SPEED : 32.06
 MAX OF CURT SPEED : 94.59
 MIN OF CURT SPEED : 1.13
 CORRU RATIO OF CURT SPEED : 1.44
 MOST LOCATED AT CURT SPEED INTERVAL (20.00, 25.00) IS 10.15%
 MEAN OF CURT DIRECTION : 192.75
 MAX OF CURT DIRECTION : 357.13
 MIN OF CURT DIRECTION : 3.84
 CORRU RATIO OF CURT DIRECTION : 1.56
 MOST LOCATED AT CURT DIRECTION INTERVAL (202.50, 225.00) IS 41.93%
 MEAN OF CURT SPEED GREAT THAN 50.0 CM/SEC : 23.44
 LOST NO. PAIRS OF DATA : 98 (11.30 %)
 VARIANCE OF CURT SPEED : 476.82
 STANDARD DEVIATION OF CURT SPEED : 21.84
 11'S CURT DIRECTION : 222.74 AT TIME : 1986. 2. 6.10: 0
 11'S CURT DIRECTION : 311.40 AT TIME : 1986. 2.25.12: 0
 CORRU RATIO OF CURT SPEED : 1.22
 DC VALUE OF CURT SPEED : -8.43
 STANDARD DEVIATION OF CURT DIRECTION : 72.56
 11'S CURT SPEED : 2.34
 11'S CURT DIRECTION : 6.25
 DC VALUE OF CURT DIRECTION : 5.58
 11'S NO. : 193 (22.26 %)

表 I - 9

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOR																						ST-D		DATE : 86/03/08/10: 0-36/04/03/12:00	
UNIT : CM/SEC AND DEGREE		CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA																							
SPEED		0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%		
DIRECT																									
N		0.0	0.3	0.3	0.3	0.8	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75		
NNE		0.0	0.8	1.6	3.2	2.2	2.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.32		
NE		0.0	0.9	3.5	8.9	11.5	7.2	3.5	1.6	1.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.76		
ENE		0.0	0.6	2.9	4.1	3.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.30		
E		0.0	0.0	1.3	1.1	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.15		
ESE		0.0	0.0	0.8	1.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.35		
ES		0.0	0.0	0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96		
SSE		0.0	0.3	0.2	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.12		
S		0.0	0.2	0.0	0.5	1.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.39		
SSW		0.3	0.0	0.3	0.3	0.8	1.4	1.1	1.0	2.1	2.9	1.4	1.6	1.6	1.6	0.6	0.5	0.0	0.0	0.0	0.0	0.0	17.54		
SW		0.0	0.3	0.2	0.6	0.6	0.6	0.5	0.3	0.0	0.5	0.3	0.2	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	4.63		
WSW		0.0	0.3	0.0	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.26		
W		0.3	0.0	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.28		
WNW		0.0	0.3	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.96		
W		0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.32		
NNW		0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.32		
N		0.6	4.1	12.0	24.1	21.9	13.4	5.6	3.0	3.3	3.7	1.8	1.8	1.6	1.9	0.8	0.5	0.0	0.0	0.0	0.0	0.0	100.00		
TOTAL NO. PAIRS OF DATA : 627		LOST NO. PAIRS OF DATA : 0 (0.00 %)																							
MEAN OF CURT SPEED : 25.78		VARIANCE OF CURT SPEED : 204.28		STANDARD DEVIATION OF CURT SPEED : 14.29																					
MAX OF CURT SPEED : 76.33		IT'S CURT DIRECT : 219.41		AT TIME : 1986. 3.23. 3: 0																					
MIN OF CURT SPEED : 3.16		IT'S CURT DIRECT : 221.71		AT TIME : 1986. 3.29. 3: 0																					
CORRU RATIO OF CURT SPEED : 1.87		SKEWNESS OF CURT SPEED : 1.72		DC VALUE OF CURT SPEED : 19.11																					
MOST LOCATED AT CURT SPEED : 109.54		INTERVAL (15.00, 20.00) IS 24.04		STANDARD DEVIATION OF CURT DIRECT : 79.81																					
MEAN OF CURT DIRECT : 352.05		VARIANCE OF CURT DIRECT : 6369.82		STANDARD DEVIATION OF CURT DIRECT : 79.81																					
MAX OF CURT DIRECT : 2.22		IT'S CURT SPEED : 15.91		DC VALUE OF CURT DIRECT : -16.34																					
MIN OF CURT DIRECT : 1.28		IT'S CURT SPEED : 9.40		DC VALUE OF CURT DIRECT : -16.34																					
CORRU RATIO OF CURT DIRECT : 1.28		SKEWNESS OF CURT DIRECT : 1.26		DC VALUE OF CURT DIRECT : -16.34																					
MOST LOCATED AT CURT DIRECT : 45.00, 57.50		INTERVAL (45.00, 57.50) IS 38.76		DC VALUE OF CURT DIRECT : -16.34																					
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 62.02		IT'S NO. : 52 (8.29 %)		DC VALUE OF CURT DIRECT : -16.34																					

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOUR
ST-D DATE : 86/04/08/12: 0-36/04/23/13:00

UNIT : CM/SEC AND DEGREE --- CURT SPEED (CM/SEC) AVG DIRECT HOURLY MEAN DATA

[illegible][illegible][illegible]

TOTAL NO. PAIRS OF DATA :		362		LOST NO. PAIRS OF DATA :		205 (56.63 %)	
MEAN OF CURT SPEED :	9.21	VARIANCE OF CURT SPEED :	65.82	STANDARD DEVIATION OF CURT SPEED :	8.11		
MAX OF CURT SPEED :	33.01	11'S CURT DIRECT :	43.25	AT TIME : 1986.4.	8.19 :	0	
MIN OF CURT SPEED :	1.70	11'S CURT DIRECT :	211.72	AT TIME : 1986.4.15.21 :	0		
CORN RATIO OF CURT SPEED :	1.42	SKEWNESS OF CURT SPEED :	1.87	OC VALUE OF CURT SPEED :	-9.32		

MEAN OF CURT DIRECT	: 105.64	VARIANCE OF CURT DIRECT	: 6292.73	STANDARD DEVIATION OF CURT DIRECT	: 79.33
MAX OF CURT DIRECT	: 326.16	11" S CURT SPEED	: 1.78		
MIN OF CURT DIRECT	: 2.30	11" S CURT SPEED	: 1.82		
CORRUPT RATIO OF CURT DIRECT	: 1.23	SKEWNESS OF CURT DIRECT	: 1.17	DC VALUE OF CURT DIRECT	: -21.71
MOST LOCATED AT CURT DIRECT	INTERVAL (45.00, 67.50)	IS	20.99%		
MEAN OF CURT SPEED GREAT THEN	50.0 CM/SEC	: 0.00	11" S NO.	: 0 (0.00 %)	

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BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOUR																							ST-E		DATE : 85/12/27/13: 0-86/01/18/11:00	
UNIT : CM/SEC AND DEGREE		CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA																								
SPEED		0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%			
DIRECT		0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%			
N	NNE	0.0	0.0	0.2	0.2	0.0	0.2	0.0	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52			
	NNE	0.0	0.0	0.6	2.8	1.1	1.3	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.64			
	NE	0.0	0.0	1.1	3.6	3.0	3.6	1.3	1.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.18			
	ENE	0.0	0.0	0.6	1.5	0.8	1.1	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.74			
	E	0.0	0.2	0.2	0.6	0.4	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52			
	ESE	0.0	0.0	0.4	0.2	0.0	0.6	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.52			
	ES	0.0	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76			
	SSE	0.0	0.2	0.0	0.2	0.9	0.2	0.6	0.2	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.85			
	S	0.0	0.0	0.2	0.8	0.8	0.4	0.4	0.4	1.5	0.2	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	5.12		
	SSW	0.0	0.4	0.4	0.8	1.1	1.3	1.7	3.4	2.1	1.3	1.3	1.3	1.3	1.3	1.1	1.1	0.9	1.5	0.8	0.4	1.3	23.91			
N	SW	0.0	0.2	0.2	2.1	1.7	2.8	4.9	1.7	3.4	1.5	1.1	0.8	1.1	0.8	0.4	1.3	0.6	0.0	0.4	2.1	27.13				
	WSW	0.2	0.2	0.2	1.1	0.6	0.6	0.4	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	3.80			
	W	0.0	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.57			
	WNW	0.2	0.0	0.6	0.9	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.66			
	NW	0.0	0.4	0.0	0.4	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.14			
	NNW	0.0	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.95			
	N	0.6	2.1	5.1	16.3	10.6	13.1	10.1	10.4	7.0	3.4	2.8	2.1	2.5	1.9	1.5	2.3	2.3	0.8	1.1	4.0	100.00				
	TOTAL NO. PAIRS OF DATA : 527																									
	MEAN OF CURT SPEED : 38.72																									
	MAX OF CURT SPEED : 184.52																									
MIN OF CURT SPEED : 3.06																										
CORNUT RATIO OF CURT SPEED : 2.05																										
MOST LOCATED AT CURT SPEED INTERVAL (15.00, 20.00) IS 16.32%																										
MEAN OF CURT DIRECT : 175.77																										
MAX OF CURT DIRECT : 358.39																										
MIN OF CURT DIRECT : 8.33																										
CORNUT RATIO OF CURT DIRECT : 1.31																										
MOST LOCATED AT CURT DIRECT INTERVAL (225.00, 247.50) IS 27.13%																										
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 81.29																										
STANDARD DEVIATION OF CURT DIRECT : 84.30																										
DC VALUE OF CURT DIRECT : -16.59																										
STANDARD DEVIATION OF CURT SPEED : 27.45																										
DC VALUE OF CURT SPEED : 30.61																										

表 I - 12

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECTION AT TAI-CHUNG HARBOUR																							ST-F DATE : 86/01/03/12: 0-86/01/05/23:00			
UNIT : CM/SEC AND DEGREE -----																							CURT SPEED (CM/SEC) AND DIRECTION HOURLY MEAN DATA			
DIRECT	SPEED	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	X			
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67			
NNE	0.0	0.0	1.7	6.7	6.7	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.00			
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67			
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
ES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
SSW	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67			
SW	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.33			
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.67			
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00			
																							X			
TOTAL NO. PAIRS OF DATA : 60																							LOST NO. PAIRS OF DATA : 0 (0.00 %)			
MEAN OF CURT SPEED : 54.77																							VARIANCE OF CURT SPEED : 638.56		STANDARD DEVIATION OF CURT SPEED : 25.27	
MAX OF CURT SPEED : 83.33																							IT'S CURT DIRECT : 224.71		AT TIME : 1986. 1. 5. 9: 0	
MIN OF CURT SPEED : 6.58																							IT'S CURT DIRECT : 217.55		AT TIME : 1986. 1. 4. 2: 0	
CORNU RATIO OF CURT SPEED : 1.18																							SKEWNESS OF CURT SPEED : -0.60		DC VALUE OF CURT SPEED : -24.85	
MOST LOCATED AT CURT SPEED INTERVAL (183.85																							VARIANCE OF CURT DIRECT : 5249.49		STANDARD DEVIATION OF CURT DIRECT : 72.45	
MAX OF CURT DIRECT : 236.91																							IT'S CURT SPEED : 66.07			
MIN OF CURT DIRECT : 40.60																							IT'S CURT SPEED : 33.68			
CORNU RATIO OF CURT DIRECT : 1.41																							SKEWNESS OF CURT DIRECT : -2.08		DC VALUE OF CURT DIRECT : -10.13	
MOST LOCATED AT CURT DIRECT INTERVAL (202.50,225.00) IS 43.33%																							IT'S CURT SPEED : 36 (60.00 %)			
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 74.09																							IT'S NO. : 36			

TOTAL NO. PAIRS OF DATA : 60
 MEAN OF CURT SPEED : 54.77
 MAX OF CURT SPEED : 83.33
 MIN OF CURT SPEED : 6.58
 CORNU RATIO OF CURT SPEED : 1.18
 MOST LOCATED AT CURT SPEED : 1.18
 MEAN OF CURT DIRECTION : 183.85
 MAX OF CURT DIRECTION : 236.91
 MIN OF CURT DIRECTION : 40.60
 CORNU RATIO OF CURT DIRECTION : 1.41
 MOST LOCATED AT CURT DIRECTION : 1.41
 MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 74.09

LOST NO. PAIRS OF DATA : 0 (0.00 %)
 VARIANCE OF CURT SPEED : 638.56
 IT'S CURT DIRECTION : 224.71
 IT'S CURT DIRECTION : 217.55
 SKEWNESS OF CURT SPEED : -0.60
 KURTOSIS OF CURT SPEED : 28.33%
 VARIANCE OF CURT DIRECTION : 5249.49
 IT'S CURT SPEED : 66.07
 IT'S CURT SPEED : 33.68
 SKEWNESS OF CURT DIRECTION : -2.08
 KURTOSIS OF CURT DIRECTION : 43.33%
 STANDARD DEVIATION OF CURT SPEED : 25.27
 STANDARD DEVIATION OF CURT DIRECTION : 72.45
 DC VALUE OF CURT DIRECTION : -10.13
 IT'S ND. : 36 (60.00 %)

表 I - 13

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG HARBOUR		ST-S		DATE : 86/04/08/13: 0-86/04/23/12:00																			
UNIT : CM/SEC AND DEGREE		CURT SPEED (CM/SEC)		AND DIRECT HOURLY MEAN DATA																			
DIRECT	SPEED	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	Σ
N	0.0	1.1	2.8	1.4	1.1	1.9	1.4	2.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.50
NNE	0.0	1.7	3.1	4.7	6.7	5.6	6.7	6.4	1.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.22
NE	0.3	0.6	2.8	3.1	2.8	1.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.39
SNE	0.0	0.3	1.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.17
E	0.0	0.6	1.1	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.06
ESE	0.3	0.8	2.2	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.28
ES	0.0	0.3	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.50
SSE	0.0	0.6	1.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.50
S	0.0	0.6	1.7	0.8	0.6	1.9	0.8	0.8	0.0	0.0	0.3	0.3	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00
SSW	0.3	0.0	0.6	1.4	1.1	0.8	0.3	0.8	0.6	0.6	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.33
SW	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.28
WSW	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56
W	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.28
WNW	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.56
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
NNW	0.0	0.0	0.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35
Σ	0.8	7.2	20.0	19.2	12.2	11.9	9.4	10.6	2.8	1.1	0.3	0.8	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.00

TOTAL NO. PAIRS OF DATA :	360	LOST NO. PAIRS OF DATA :	0 (0.00 %)
MEAN OF CURT SPEED :	24.83	VARIANCE OF CURT SPEED :	239.93
MAX OF CURT SPEED :	104.69	STANDARD DEVIATION OF CURT SPEED :	15.49
MIN OF CURT SPEED :	2.62	IT'S CURT DIRECT :	197.75 AT TIME : 1986. 4.12. 0: 0
CORNUS RATIO OF CURT SPEED :	1.97	IT'S CURT DIRECT :	210.29 AT TIME : 1986. 4.23.12: 0
MOST LOCATED AT CURT SPEED :	INTERVAL (10.00, 15.00) IS 20.00%	DC VALUE OF CURT SPEED :	25.29
MEAN OF CURT DIRECT :	87.59	VARIANCE OF CURT DIRECT :	6152.48
MAX OF CURT DIRECT :	359.19	STANDARD DEVIATION OF CURT DIRECT :	78.44
MIN OF CURT DIRECT :	1.85	IT'S CURT SPEED :	10.16
CORNUS RATIO OF CURT DIRECT :	1.38	IT'S CURT SPEED :	26.91
MOST LOCATED AT CURT DIRECT :	INTERVAL (22.50, 45.00) IS 37.22%	DC VALUE OF CURT DIRECT :	-12.36
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC :	76.12	IT'S NO. :	17 (4.72 %)

表 I - 14

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG MARCUR ST-BU DATE : 86/12/ 2/11: 0-87/ 1/ 6/ 2: 0

UNIT : CM/SEC AND DEGREE ---- CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA

DIRECT	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.85
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.02
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.85
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.36
ES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.12
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.24
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.36
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.27
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.65
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.73
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.33
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.25
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.52
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.21
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.24

TOTAL NO. PAIRS OF DATA : 832
 MEAN OF CURT SPEED : 35.71
 MAX OF CURT SPEED : 117.42
 MIN OF CURT SPEED : 0.11
 CORRU RATIO OF CURT SPEED : 1.45
 MOST LOCATED AT CURT SPEED INTERVAL (20.00, 25.00) IS 13.54%
 MEAN OF CURT DIRECT : 186.41
 MAX OF CURT DIRECT : 359.77
 MIN OF CURT DIRECT : 0.10
 CORRU RATIO OF CURT DIRECT : 1.35
 MOST LOCATED AT CURT DIRECT INTERVAL (225.00, 247.50) IS 25.65%
 MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 63.11
 IT'S NO. : 201 (24.16 %)

LOST NO. PAIRS OF DATA : 23 (2.76 %)
 VARIANCE OF CURT SPEED : 352.38
 IT'S CURT DIRECT : 227.83 AT TIME : 86.12.7.19: C
 IT'S CURT DIRECT : 332.31 AT TIME : 86.12.29.7: C
 SKEWNESS OF CURT SPEED : 1.52
 DC VALUE OF CURT SPEED : -5.05
 STANDARD DEVIATION OF CURT DIRECT : 10197.37
 STANDARD DEVIATION OF CURT SPEED : 19.81
 DC VALUE OF CURT DIRECT : -11.32

表 I - 15

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECTION AT TAI-CHUNG MARCUL		ST-G_ DATE : 87/03/06/12: 0-87/C3/24/11:00	
UNIT : CM/SEC AND DEGREE		CURT SPEED (CM/SEC) AND DIRECTION HOURLY MEAN DATA	
DIRECT	INDIRECT	0.0	5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0 45.0 50.0 55.0 60.0 65.0 70.0 75.0 80.0 85.0 90.0 95.0 100.0
N	0.0	1.4	1.6 2.5 2.5 0.9 0.5 0.9 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
NNE	0.2	0.7	2.5 2.5 4.2 3.0 2.8 2.3 1.4 0.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
NE	0.0	1.9	2.3 0.9 0.9 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ENE	0.2	1.4	1.2 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
E	0.5	1.4	0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ESE	0.2	0.5	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ES	0.5	0.5	0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
SSE	0.5	0.7	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
S	0.2	0.7	0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
SSW	0.0	0.7	0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
SW	0.2	1.4	1.4 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
WSW	0.0	1.6	3.0 1.9 2.3 2.5 1.4 1.9 1.4 1.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
W	1.4	3.0	4.2 3.9 3.2 1.6 0.7 0.5 0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
WNW	0.0	1.9	1.4 1.2 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
NW	0.2	1.4	0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
NNW	0.9	2.5	0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N	5.1	21.5	20.1 13.4 13.7 8.6 5.3 5.6 3.7 2.8 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
TOTAL NO. PAIRS OF DATA : 432		LOST NO. PAIRS OF DATA : 0 (0.00 %)	
MEAN OF CURT SPEED : 18.97		VARIANCE OF CURT SPEED : 131.40	
MAX OF CURT SPEED : 57.94		STANDARD DEVIATION OF CURT SPEED : 11.46	
MIN OF CURT SPEED : 0.23		AT TIME : 1987. 3.15.12: 0	
CORNUT RATIO OF CURT SPEED : 1.50		AT TIME : 1987. 3. 9. 8: 0	
MOST LOCATED AT CURT SPEED : 170.11		DC VALUE OF CURT SPEED : -4.60	
MEAN OF CURT DIRECTION : 357.54		STANDARD DEVIATION OF CURT DIRECTION : 119.48	
MAX OF CURT DIRECTION : 1.02		AT TIME : 1987. 3.15.12: 0	
MIN OF CURT DIRECTION : 1.09		AT TIME : 1987. 3. 9. 8: 0	
CORNUT RATIO OF CURT DIRECTION : 1.09		DC VALUE OF CURT DIRECTION : -30.50	
MOST LOCATED AT CURT DIRECTION : 22.50, 45.00		AT TIME : 1987. 3.15.12: 0	
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC : 57.94		AT TIME : 1987. 3. 9. 8: 0	

表 I - 16

BIVARIATE DISTRIBUTION OF CURT SPEED AND DIRECT AT TAI-CHUNG-HARCUR ST-H DATE : 87/03/05/12: 0-87/C3/24/09:00

UNIT : CM/SEC AND DEGREE ----- CURT SPEED (CM/SEC) AND DIRECT HOURLY MEAN DATA

DIRECT	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	%
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44
NE	0.9	2.2	2.4	4.0	1.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.11
ENE	0.4	4.2	12.1	12.3	6.6	2.6	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.43
E	0.2	2.9	3.5	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.93
ESE	0.9	2.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.52
ES	1.8	1.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.30
SSE	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44
S	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32
SSW	0.0	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.76
SW	0.2	2.0	4.0	3.5	1.3	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.67
WSW	0.4	0.4	3.7	2.9	2.6	2.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.00
W	0.0	0.7	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.42
WNW	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10
NW	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.22
NNW	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44
N	0.2	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.86

5.7	15.6	30.0	24.2	12.1	6.2	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.00
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TOTAL NO. PAIRS OF DATA :	454	LOST NO. PAIRS OF DATA :	0 (0.00 %)
MEAN CF CURT SPEED :	14.76	VARIANCE OF CURT SPEED :	43.61
MAX OF CURT SPEED :	37.73	STANDARD DEVIATION OF CURT SPEED :	6.62
MIN OF CURT SPEED :	0.53	IT'S CURT DIRECT :	49.34 AT TIME : 1987. 3. 7.15: 0
CORNU RATIO OF CURT SPEED :	1.58	IT'S CURT DIRECT :	134.98 AT TIME : 1987. 3.24. 9: 0
MOST LOCATED AT CURT SPEED :	INTERVAL (10.00, 15.00) IS 29.56%	DC VALUE OF CURT SPEED :	0.36
MEAN OF CURT DIRECT :	116.38	VARIANCE OF CURT DIRECT :	7078.89
MAX OF CURT DIRECT :	357.69	STANDARD DEVIATION OF CURT DIRECT :	84.14
MIN OF CURT DIRECT :	11.43	IT'S CURT SPEED :	4.18
CORNU RATIO OF CURT DIRECT :	1.23	IT'S CURT SPEED :	8.14
MOST LOCATED AT CURT DIRECT :	INTERVAL (45.00, 67.50) IS 39.43%	DC VALUE OF CURT DIRECT :	-21.78
MEAN OF CURT SPEED GREAT THEN 50.0 CM/SEC :	0.00	IT'S NO. :	0 (0.00 %)

附 表 II

風 速、風 向 每 月 分 佈 統 計 表

表 號	時 間	測 站	備 註
II - 1	1985 . 12	北 堤 站	
II - 2	1986 . 01	"	
II - 3	1986 . 02	"	
II - 4	1986 . 03	"	
II - 5	1986 . 04	"	
II - 6	1986 . 12	"	
II - 7	1987 . 01	"	
II - 8	1987 . 03	"	

表 II - 1

BIVARIATE DISTRIBUTION OF WIND SPEED AND DIRECTION AT TAI-CHUNG MARRECUR																						DATE : 85-12-01.01:00-26-01- 1.00:00	
UNIT : M/SEC AND DEGREE ----- WIND SPEED (M/SEC) AND DIRECTION HOURLY DATA																							
DIRECT	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	%	
N																							
NNE	0.0	0.1	0.3	0.5	0.3	0.1	0.3	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.15	
NE	0.0	0.0	0.1	0.7	0.7	0.8	0.9	1.3	1.1	3.5	1.6	1.5	1.2	0.9	0.3	0.0	0.4	0.1	0.0	0.0	0.0	15.15	
ENE	0.1	0.5	2.7	3.0	2.6	3.6	3.2	4.8	5.8	6.7	6.0	7.5	4.7	4.6	6.3	3.8	2.2	2.4	1.1	0.3		71.91	
E	0.0	0.1	1.3	0.5	0.7	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.23		
ESE	0.0	0.8	0.3	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	2.02		
ES	0.0	0.7	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34		
SSE	0.1	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67		
S	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54		
SSW	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54		
SW	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40		
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13		
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00		
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00		
NW	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13		
NNW	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54		
N	0.0	0.3	0.1	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21		
TOTAL NO. PAIRS OF DATA : 744																							
MEAN OF WIND SPEED : 9.20																						LAST NO. PAIRS OF DATA : 0 (0.00 %)	
MAX OF WIND SPEED : 20.00																						VARIANCE OF WIND SPEED : 15.47	
MIN OF WIND SPEED : 0.50																						STANDARD DEVIATION OF WIND SPEED : 4.41	
CORRU RATIO OF WIND SPEED : 1.46																						: 45.00 AT TIME : 25.12.23.16: C	
MOST LOCATED AT WIND SPEED : 9.00, 10.00 IS 10.62%																						: 252.50 AT TIME : 25.12.25.6: C	
MEAN OF WIND DIRECTION : 51.29																						DC VALUE OF WIND SPEED : -7.13	
MAX OF WIND DIRECTION : 337.50																						STANDARD DEVIATION OF WIND DIRECTION : 45.53	
MIN OF WIND DIRECTION : 0.00																						: 3.50	
CORRU RATIO OF WIND DIRECTION : 5.16																						: 1.50	
MOST LOCATED AT WIND DIRECTION : 45.00, 67.50 IS 71.91%																						DC VALUE OF WIND DIRECTION : 225.92	
MEAN OF WIND SPEED GREAT THEN 50.0 CM/SEC : 11.01																						IT'S NO. : 573 (77.02 %)	

表 II - 2

BIVARIATE DISTRIBUTION OF WIND SPEED AND DIRECTION AT TAI-CHUNG HARBOR DATE : 86-01-01 01:00-02-1.00:00

UNIT : CM/SEC AND DEGREE ----- WIND SPEED (M/SEC) AND DIRECTION HOURLY DATA

DIRECT	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	%
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94
NNE	0.0	0.1	0.1	0.1	0.1	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94
NE	0.0	0.1	0.3	0.1	0.4	1.3	1.2	1.1	1.1	1.1	1.5	1.3	0.3	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	10.22
ENE	0.1	1.6	2.3	2.0	5.4	4.0	4.6	5.0	5.6	5.5	8.6	5.1	5.0	5.6	2.6	4.4	1.5	0.5	0.0	0.0	0.0	69.49
E	0.0	0.9	0.9	1.1	1.3	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.70
ESE	0.1	0.5	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61
ES	0.4	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08
SSE	0.3	1.1	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.15
S	0.3	0.1	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34
SSW	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
W	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13
WNW	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13
NW	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13
NNW	0.0	0.0	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00

1.3 5.1 5.6 5.2 7.3 6.0 5.9 6.2 6.7 6.6 10.1 6.5 5.2 5.6 2.7 4.4 1.6 0.7 0.0 0.0 0.0 0.0 92.88

TOTAL NO. PAIRS OF DATA : 744
 MEAN OF WIND SPEED : 8.11
 MAX OF WIND SPEED : 17.80
 MIN OF WIND SPEED : 0.20

CORNU RATIO OF WIND SPEED : 1.38
 MOST LOCATED AT WIND SPEED : 10.00, 11.00 IS 10.08%
 MEAN OF WIND DIRECTION : 52.00
 MAX OF WIND DIRECTION : 315.00
 MIN OF WIND DIRECTION : 0.00

CORNU RATIO OF WIND DIRECTION : 4.29
 MOST LOCATED AT WIND DIRECTION : 45.00, 67.50 IS 69.49%
 MEAN OF WIND DIRECTION : 10.31

STANDARD DEVIATION OF WIND SPEED : 4.23
 STANDARD DEVIATION OF WIND DIRECTION : 37.31
 DC VALUE OF WIND DIRECTION : 172.96
 DC VALUE OF WIND SPEED : -11.94

表 II - 3

BIVARIATE DISTRIBUTION OF WIND SPEED AND DIRECTION AT TAI-CHUNG HARBOR																							DATE : 86-02-01 01:00-16-03- 1.00:00	
UNIT : M/SEC AND DEGREE		WIND SPEED (M/SEC) AND DIRECTION HOURLY DATA																						
DIRECT	SPEED	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	%	
N		0.0	0.3	0.1	0.3	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.83	
NNE		0.1	0.1	0.6	1.2	0.7	0.3	0.6	0.7	0.4	0.3	0.3	0.5	0.6	0.3	0.3	0.1	0.1	0.1	0.1	0.0	0.0	8.04	
NE		0.0	0.4	1.6	2.1	2.4	4.6	5.1	7.6	4.5	4.8	6.4	6.1	3.1	3.9	3.1	3.5	2.4	1.3	1.3	0.1	0.1	64.72	
ENE		0.1	0.1	0.4	0.1	0.6	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.92	
E		0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	
ESE		0.1	0.1	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	
ES		0.1	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34	
SSE		0.0	0.1	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.04	
S		0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	
SSW		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.15	
SW		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
WSW		0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.30	
W		0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.30	
WNW		0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	
NW		0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	
NNW		0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	
N		0.7	3.0	5.7	4.9	4.9	5.5	6.3	8.5	5.2	5.2	6.8	7.1	3.7	4.2	3.4	4.0	2.5	1.5	1.3	0.1	0.1	84.67	
TOTAL NO. PAIRS OF DATA : 672																							LOST NO. PAIRS OF DATA : 102 (15.33 %)	
MEAN CF WIND SPEED : 8.70																							VARIANCE OF WIND SPEED : 15.89	
MAX OF WIND SPEED : 19.00																							STANDARD DEVIATION CF WIND SPEED : 4.46	
MIN OF WIND SPEED : 0.70																							IT'S WIND DIRECT : 45.00 AT TIME : 86. 2.20.13: 0	
CORRU RATIO OF WIND SPEED : 1.42																							IT'S WIND DIRECT : 45.00 AT TIME : 86. 2.20.13: 0	
MOST LOCATED AT WIND SPEED : 7.00, 8.00																							DC VALUE CF WIND SPEED : -5.70	
MEAN OF WIND DIRECT : 53.86																							VARIANCE OF WIND DIRECT : 2316.68	
MAX CF WIND DIRECT : 337.50																							IT'S WIND SPEED : 45.00	
MIN CF WIND DIRECT : 0.00																							IT'S WIND SPEED : 45.00	
CORRU RATIO OF WIND DIRECT : 4.34																							STANDARD DEVIATION CF WIND DIRECT : 48.13	
MOST LOCATED AT WIND DIRECT : 45.00, 67.50																							DC VALUE CF WIND DIRECT : 176.58	
MEAN CF WIND SPEED GREAT THEN 50.0 CM/SEC : 10.55																							IT'S NO. : 429 (63.84 %)	

表 II - 4

BIVARIATE DISTRIBUTION OF WIND SPEED AND DIRECTION AT TAI-CHUNG HARBOR																							DATE : 86-03-01.01:00-86-04- 1.00:00			
UNIT : M/SEC AND DEGREE ----- WIND SPEED (M/SEC) AND DIRECTION HOURLY DATA																										
SPEED		0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	%			
DIRECT																										
N		0.1	0.4	2.2	1.3	0.3	0.3	0.5	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.51			
NNE		0.7	0.3	0.9	1.1	3.1	2.7	3.4	2.0	2.4	3.0	0.4	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.30			
NE		0.1	1.1	1.7	2.7	2.6	2.8	4.6	4.0	4.3	3.0	2.0	2.2	2.0	1.2	1.3	0.7	0.0	0.0	0.0	0.0	0.0	38.31			
ENE		0.5	0.5	1.5	1.6	0.9	0.5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.91			
E		0.3	0.3	0.7	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.88			
ESE		0.1	0.1	1.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61			
ES		0.3	0.9	0.9	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.82			
SSE		0.7	0.1	0.5	0.4	1.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.23			
S		0.1	0.3	0.7	1.2	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.03			
SSW		0.0	0.0	0.3	0.4	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.75			
SW		0.0	0.0	0.1	0.2	0.0	0.3	0.3	0.1	0.4	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02			
WSW		0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67			
W		0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54			
WNW		0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13			
NW		0.0	0.0	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67			
NNW		0.0	0.9	0.1	0.4	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02			
N		3.0	5.0	11.4	10.6	12.0	8.7	9.3	6.6	7.9	6.2	3.0	2.3	2.3	1.2	1.3	0.7	0.0	0.0	0.0	0.0	0.0	91.40			
TOTAL NO. PAIRS OF DATA : 744																							LOST NO. PAIRS OF DATA : 64 (8.60 %)			
MEAN OF WIND SPEED : 5.83																							VARIANCE OF WIND SPEED : 11.35		STANDARD DEVIATION OF WIND SPEED : 3.37	
MAX. OF WIND SPEED : 15.60																							IT'S WIND DIRECT : 45.00		AT TIME : 86. 3.23. 0: 0	
MIN. OF WIND SPEED : 0.10																							IT'S WIND DIRECT : 157.50		AT TIME : 86. 3.7. 9: 0	
CORRU RATIO OF WIND SPEED : 1.50																							SKEWNESS OF WIND SPEED : 1.12		DC VALUE OF WIND SPEED : -4.65	
MOST LOCATED AT WIND SPEED INTERVAL (4.00, 5.00) IS 11.96%																							STANDARD DEVIATION OF WIND DIRECT : 73.85			
MEAN OF WIND DIRECTION : 72.17																							VARIANCE OF WIND DIRECT : 5453.94			
MAX. OF WIND DIRECTION : 337.50																							IT'S WIND SPEED : 3.50			
MIN. OF WIND DIRECTION : 0.00																							IT'S WIND SPEED : 4.60			
CORRU RATIO OF WIND DIRECTION : 1.86																							DC VALUE OF WIND DIRECT : 18.48			
MOST LOCATED AT WIND DIRECTION INTERVAL (45.00, 67.50) IS 38.31%																							IT'S NO. : 353 (47.45 %)			
MEAN OF WIND SPEED GREAT THEN 50.0 CM/SEC : 8.43																							IT'S NO. : 353 (47.45 %)			

表 II - 5

BIVARIATE DISTRIBUTION OF WIND SPEED AND DIRECTION AT TAI-CHUNG HARBOR																							DATE : 86-04-01 01:00-06-05- 1:00:00			
UNIT : M/SEC AND DEGREE		WIND SPEED (M/SEC) AND DIRECTION HOURLY DATA																								
SPEED		0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	%			
DIRECT																										
N		0.0	0.8	1.3	0.7	0.7	0.3	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.17			
NNE		1.0	0.3	1.3	1.4	1.7	0.7	1.1	1.8	1.1	1.4	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.78			
NE		0.1	1.3	3.1	2.1	3.1	6.0	6.3	5.4	3.3	2.6	3.1	1.3	0.3	0.7	0.3	0.7	0.3	0.0	0.0	0.0	0.0	39.72			
ENE		0.1	0.7	2.4	0.9	0.4	0.6	1.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.39			
E		0.0	0.4	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.53			
ESE		0.1	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11			
ES		1.0	1.8	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.33			
SSE		0.1	0.6	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.94			
S		0.1	0.6	2.6	2.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.53			
SSH		0.0	0.3	1.4	2.2	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.72			
SW		0.1	0.3	0.6	0.7	1.3	0.4	1.1	0.7	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.56			
WSW		0.7	0.3	0.6	0.3	0.4	0.1	0.8	1.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.42			
W		0.0	0.3	0.7	0.8	0.8	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.47			
WNW		0.3	0.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.29			
NW		0.0	0.3	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.11			
NNW		0.0	0.1	0.3	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83			
N		3.8	9.0	17.9	12.2	10.0	9.0	10.7	10.0	5.1	4.6	4.0	1.4	0.3	0.7	0.3	0.7	0.3	0.0	0.0	0.0	0.0	100.00			
TOTAL NO. PAIRS OF DATA : 720																							LOST NO. PAIRS OF DATA : 0 (0.00 %)			
MEAN OF WIND SPEED : 5.05																							VARIANCE OF WIND SPEED : 9.39		STANDARD DEVIATION OF WIND SPEED : 3.06	
MAX OF WIND SPEED : 16.10																							IT'S WIND DIRECT : 45.00 AT TIME : 86.4.11.18:0			
MIN OF WIND SPEED : 0.20																							IT'S WIND DIRECT : 22.50 AT TIME : 86.4.7.10:0			
CORNU RATIO OF WIND SPEED : 1.45																							SKEWNESS OF WIND SPEED : 1.40		DC VALUE OF WIND SPEED : -5.46	
MOST LOCATED AT WIND SPEED INTERVAL (2.00, 3.00) IS 17.92%																										
MEAN OF WIND DIRECT : 102.22																							VARIANCE OF WIND DIRECT : 8018.51		STANDARD DEVIATION OF WIND DIRECT : 89.55	
MAX OF WIND DIRECT : 337.50																							IT'S WIND SPEED : 1.90			
MIN OF WIND DIRECT : 0.00																							IT'S WIND SPEED : 5.70			
CORNU RATIO OF WIND DIRECT : 1.28																							SKEWNESS OF WIND DIRECT : 1.29		DC VALUE OF WIND DIRECT : -18.53	
MOST LOCATED AT WIND DIRECT INTERVAL (45.00, 67.50) IS 39.72%																										
MEAN OF WIND SPEED GREAT THEN 50.0 CM/SEC : 7.91																							IT'S NO. : 316 (43.89 %)			

表 II - 6

DATE : 86-12-01.01:00-87-01- 1.00:00

BI-VARIATE DISTRIBUTION OF WIND SPEED AND DIRECTION AT TAI-CHUNG HARBOR

UNIT : M/SEC AND DEGREE --- WIND SPEED (M/SEC) AND DIRECTION DATA

DIRECTION	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	%
N	0.1	0.4	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08
NNE	0.0	0.3	0.5	0.9	0.5	0.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.45
NE	0.3	0.9	1.2	0.5	1.9	2.4	2.6	2.7	2.3	3.2	1.6	1.2	2.3	2.7	1.6	1.1	0.9	0.3	0.1	0.0	0.0	29.84
ENE	0.7	1.7	1.3	2.3	2.7	3.0	2.8	2.6	3.8	3.4	3.1	3.4	6.0	3.2	3.8	2.2	2.3	0.5	0.4	0.1	0.0	49.19
E	0.0	0.4	0.9	1.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.96
ESE	0.4	0.8	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.69
ES	1.3	0.8	1.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.03
SSE	0.7	0.9	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.69
S	0.7	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21
SSW	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13
SW	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40
WSW	0.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
WNW	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67
NW	0.1	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67
NNW	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40
N	4.6	7.4	9.1	7.5	5.6	6.2	5.8	5.4	6.0	6.6	4.7	4.6	8.3	5.9	5.4	3.2	3.2	0.2	0.5	0.1	0.1	100.00

TOTAL NO. PAIRS OF DATA : 744
 MEAN OF WIND SPEED : 7.57
 MAX OF WIND SPEED : 19.80
 MIN OF WIND SPEED : 0.01
 CORRUPTED OF WIND SPEED : 1.33
 MOST LOCATED AT WIND SPEED : 12.00, 13.00
 MEAN OF WIND DIRECTION : 72.51
 MAX OF WIND DIRECTION : 337.50
 MIN OF WIND DIRECTION : 0.00
 CORRUPTED OF WIND DIRECTION : 3.01
 MOST LOCATED AT WIND DIRECTION : 67.50, 90.00
 MEAN OF WIND SPEED GREAT THEN 50.0 CM/SEC : 10.73

LAST NO. PAIRS OF DATA : 0 (0.00 %)
 VARIANCE OF WIND SPEED : 23.24
 IT'S WIND DIRECTION : 67.50 AT TIME : 86.12. 1. 5: C
 IT'S WIND DIRECTION : 315.00 AT TIME : 86.12. 5.18: C
 SKEWNESS OF WIND SPEED : 0.21
 DC VALUE OF WIND SPEED : -15.55

STANDARD DEVIATION OF WIND SPEED : 4.82
 STANDARD DEVIATION OF WIND DIRECTION : 47.01
 DC VALUE OF WIND DIRECTION : 91.52
 DC VALUE (66.26 %)

表 II - 7

BIVARIATE DISTRIBUTION OF WIND SPEED AND DIRECTION AT TAI-CHUNG HARECUR DATE : 87-01-01.01:00-87-02- 1.00:00

UNIT : M/SEC AND DEGREE ----- WIND SPEED (M/SEC) AND DIRECTION HOURS DATA

DIRECTION	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	%
N																						
NNE	0.0	0.1	0.4	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.48
NE	0.1	0.0	0.3	1.1	0.8	1.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.70
ENE	0.0	0.1	0.5	1.3	2.3	1.9	2.2	2.0	2.6	1.5	1.3	0.5	1.3	1.2	0.5	0.7	0.5	0.0	0.0	0.0	0.0	20.56
E	0.0	1.3	3.0	3.1	2.7	2.8	4.7	3.9	5.0	3.5	3.4	3.6	5.0	4.3	2.0	2.6	1.9	1.1	0.5	0.0	0.0	54.44
ESE	0.1	0.5	1.9	1.7	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.70
ES	0.0	0.5	1.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.42
SSE	0.4	1.1	0.9	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.23
S	0.3	0.1	0.8	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34
SSW	0.0	0.1	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.06
SW	0.1	0.1	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.21
WSW	0.1	0.4	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.61
W	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40
WNW	0.1	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67
NW	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.27
NNW	0.0	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81
N	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40
%	1.6	4.8	11.6	11.0	6.3	6.2	7.4	6.6	7.8	5.2	4.7	4.2	6.5	5.5	2.6	3.2	2.4	1.1	0.5	0.0	0.0	99.33

TOTAL NO. PAIRS OF DATA : 744
 MEAN OF WIND SPEED : 7.52
 MAX OF WIND SPEED : 18.20
 MIN OF WIND SPEED : 0.00
 CORRU RATIO OF WIND SPEED : 1.38
 MOST LOCATED AT WIND SPEED : 1.38
 MEAN OF WIND DIRECTION : 76.51
 MAX OF WIND DIRECTION : 337.50
 MIN OF WIND DIRECTION : 0.00
 CORRU RATIO OF WIND DIRECTION : 2.85
 MOST LOCATED AT WIND DIRECTION : 67.50, 90.00
 MEAN OF WIND SPEED GREAT THAN 50.0 CM/SEC : 10.26
 LOST NO. PAIRS OF DATA : 5 (0.67 %)
 VARIANCE OF WIND SPEED : 20.27
 IT'S WIND DIRECTION : 67.50 AT TIME : 87.1.24.7:0
 IT'S WIND DIRECTION : 55.59 AT TIME : 87.1.1.3:0
 SKEWNESS OF WIND SPEED : 0.63
 KURTOSIS OF WIND SPEED : 11.56%
 VARIANCE OF WIND DIRECTION : 2619.25
 IT'S WIND SPEED : 0.90
 IT'S WIND DIRECTION : 1.10
 SKEWNESS OF WIND DIRECTION : 13.00
 KURTOSIS OF WIND DIRECTION : 54.44%
 STANDARD DEVIATION OF WIND SPEED : 4.50
 STANDARD DEVIATION OF WIND DIRECTION : 51.18
 DC VALUE OF WIND SPEED : -12.03
 DC VALUE OF WIND DIRECTION : 81.26
 IT'S NO. : 467 (62.77 %)

表 II - 8

DATE : 87-03-01 01:00-87-04- 1:00:00

BIVARIATE DISTRIBUTION OF WIND SPEED AND DIRECTION AT TAI-CHUNG HARBOR

UNIT : M/SEC AND DEGREE ----- WIND SPEED (M/SEC) AND DIRECTION HOURLY DATA

UNIT : IN/SEC AND DEGREE																						WIND SPEED (KNOTS)																						%	
SPEED		0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0																							
DIRECT																																													
N		0.1	0.1	0.1	0.1	0.1	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08																						
NNE		0.1	0.7	0.5	0.1	0.4	0.1	0.5	0.0	0.0	0.5	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.45																						
NE		0.1	0.3	1.1	2.0	2.6	3.8	1.5	1.6	1.5	1.2	1.3	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	18.55																						
ENE		0.0	0.8	1.2	2.6	3.5	2.6	3.9	2.6	2.0	2.3	1.5	1.2	1.3	0.5	1.2	0.9	0.5	0.5	0.1	0.0	0.0	25.30																						
E		0.0	0.1	1.1	1.1	1.7	0.3	0.7	0.3	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.91																						
ESE		0.1	0.0	0.0	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94																						
ES		0.1	0.1	0.3	0.4	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.34																						
SSE		0.3	0.1	0.3	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.08																						
S		0.1	0.4	0.3	0.5	0.8	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.36																						
SSW		0.0	0.0	0.8	3.6	2.0	1.2	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.32																						
SW		0.1	0.4	1.5	2.3	2.4	1.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.47																						
WSW		0.0	0.3	0.5	0.7	0.5	1.3	1.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.24																						
W		0.1	1.3	0.7	0.5	0.5	0.3	0.5	1.1	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.72																						
WNW		0.0	0.3	0.7	0.1	0.5	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02																						
NW		0.3	0.7	0.7	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02																						
NNW		0.0	0.0	0.1	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.81																						
N		1.6	5.6	9.8	15.7	16.8	11.8	9.5	6.7	5.9	4.7	3.0	1.5	1.9	0.5	1.3	0.9	0.5	0.5	0.1	0.0	0.0	98.66																						

TOTAL NO. PAIRS OF DATA : 744
 MEAN OF WIND SPEED : 5.73
 MAX OF WIND SPEED : 18.00
 MIN OF WIND SPEED : 0.00
 CORRU RATIO OF WIND SPEED : 1.68
 MOST LOCATED AT WIND SPEED : 128.59
 MEAN OF WIND DIRECTION : 128.59
 MAX OF WIND DIRECTION : 327.50
 MIN OF WIND DIRECTION : 0.00
 CORRU RATIO OF WIND DIRECTION : 1.19
 MOST LOCATED AT WIND DIRECTION : 128.59
 MEAN OF WIND SPEED GREAT THEN 50.0 CM/SEC : 8.39
 LOST NO. PAIRS OF DATA : 10 (1.34 %)
 VARIANCE OF WIND SPEED : 10.58
 IT'S WIND DIRECTION : 67.50 AT TIME : 87.3.25.21: C
 IT'S WIND DIRECTION : 59.59 AT TIME : 87.3.3.22: C
 SKEWNESS OF WIND SPEED : 2.48
 DC VALUE OF WIND SPEED : 7.12
 STANDARD DEVIATION OF WIND SPEED : 3.31
 VARIANCE OF WIND DIRECTION : 8181.07
 IT'S WIND DIRECTION : 3.90
 IT'S WIND DIRECTION : 6.80
 SKEWNESS OF WIND DIRECTION : 0.78
 DC VALUE OF WIND DIRECTION : -24.35
 STANDARD DEVIATION OF WIND DIRECTION : 90.45

附 表 III

波高 (H_{max} , $H_{1/3}$) 及週期 (T_{max} , $T_{1/3}$) 分佈統計表

表 號	時 間	測 站	備 註
III - 1	86/12/02-12/11	B	
III - 2	86/12/12-87/01/27	B	
III - 3	86/03/07-03/10	W	
III - 4	86/04/08-04/24	W	
III - 5	86/03/06-03/24	H	

表 III - 1 (a)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOR ST-2 DATE : 86.12.02/13:00-86.12.11/11:00

UNIT : M AND SEC ----- WAVE HEIGHT (HMAX) AND PERIOD (TMAX) 2.00 HR DATA

PERIOD HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	>
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.9	0.9	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
6.0	0.0	0.9	1.9	0.9	0.9	3.7	1.9	2.8	0.9	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.8
7.0	0.0	0.0	0.0	3.7	3.7	8.3	9.3	1.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.6
8.0	0.0	0.0	0.9	2.8	2.8	7.4	6.5	1.9	1.9	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.8
9.0	0.0	0.0	1.9	0.9	0.0	0.0	0.9	0.0	1.9	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3
10.0	0.0	0.0	1.9	0.0	0.0	0.0	0.9	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6
11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
15.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0																						91.67

TOTAL NO. PAIRS OF DATA : 108
 MEAN OF WAVE HEIGHT : 2.79
 MAX OF WAVE HEIGHT : 5.84
 MIN OF WAVE HEIGHT : 0.27
 CORNU RATIO OF WAVE HEIGHT : 1.71
 MOST LOCATED AT WAVE HEIGHT : 1.71
 MEAN OF WAVE PERIOD : 8.14
 MAX OF WAVE PERIOD : 15.54
 MIN OF WAVE PERIOD : 5.32
 CORNU RATIO OF WAVE PERIOD : 2.19
 MOST LOCATED AT WAVE PERIOD : 2.19
 MEAN OF WAVE HEIGHT LESS THEN 14.0 SEC : 2.79

LAST NO. PAIRS OF DATA : 9 (8.33 %)
 VARIANCE OF WAVE HEIGHT : 1.48
 IT'S WAVE PERIOD : 5.03 AT TIME : 1986.12. 7.19: 0
 IT'S WAVE PERIOD : 12.50 AT TIME : 1986.12. 6. 7: 0
 SKEWNESS OF WAVE HEIGHT : 0.24
 STANDARD DEVIATION OF WAVE PERIOD : 1.59

DC VALUE OF WAVE HEIGHT : 8.95
 DC VALUE OF WAVE PERIOD : 35.43
 IT'S NO. : 99 (51.67 %)

表 III - 1 (b)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOUR ST-2 DATE : 86.12.02/13:00-86.12.11/11:00

UNIT : M AND SEC ----- WAVE HEIGHT (H1/3) AND PERIOD (T1/3) 2.00 HR DATA

PERIOD HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	Σ
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.0	0.0	0.0	0.9	0.0	3.7	2.9	2.8	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1
8.0	0.0	0.9	6.5	13.9	16.7	6.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.4
9.0	0.0	3.7	3.7	2.8	7.4	1.9	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.4
10.0	2.8	0.9	1.9	0.0	0.0	0.0	2.8	0.0	1.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1
11.0	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
12.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Σ	5.6	6.5	13.0	16.7	27.6	11.1	6.5	0.9	2.8	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.67

TOTAL NO. PAIRS OF DATA : 108
 MEAN OF WAVE HEIGHT : 2.03
 MAX OF WAVE HEIGHT : 4.68
 MIN OF WAVE HEIGHT : 0.20
 CORRU RATIO OF WAVE HEIGHT : 1.74
 MOST LOCATED AT WAVE HEIGHT : 1.74
 MEAN OF WAVE PERIOD : 7.58
 MAX OF WAVE PERIOD : 11.62
 MIN OF WAVE PERIOD : 6.23
 CORRU RATIO OF WAVE PERIOD : 1.73
 MOST LOCATED AT WAVE PERIOD : 7.58

LCST NO. PAIRS OF DATA : 5 (8.33 %)
 VARIANCE OF WAVE HEIGHT : 0.81
 IT'S WAVE PERIOD : 5.37 AT TIME : 1986.12. 7.11: C
 IT'S WAVE PERIOD : 9.56 AT TIME : 1986.12. 6. 9: C
 SKEWNESS OF WAVE HEIGHT : 0.53
 CC VALUE OF WAVE HEIGHT : 10.67

VARIANCE OF WAVE PERIOD : 1.09
 IT'S WAVE HEIGHT : 0.21
 IT'S WAVE HEIGHT : 3.21
 SKEWNESS OF WAVE PERIOD : 2.84
 CC VALUE OF WAVE PERIOD : 1.04

表 III - 2 (a)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOUR

ST-2 DATE : 86.12.12/14:00-87.01.07/10:00

UNIT : M AND SEC ---- WAVE HEIGHT (HMAX) AND PERIOD (TMAX) 2.00 HR DATA

PERIOD HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	%
4.0	0.3	0.3	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
5.0	0.0	0.0	0.3	0.6	0.6	1.3	1.6	1.3	0.6	0.6	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7
6.0	0.0	0.3	0.6	2.6	2.3	2.9	2.6	1.9	0.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1
7.0	0.6	1.0	1.9	2.6	4.2	4.2	4.2	1.6	1.3	1.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.5
8.0	1.6	0.6	2.3	4.5	1.9	2.6	2.3	0.6	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.4
9.0	2.3	0.3	0.6	1.0	1.3	0.0	0.6	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8
10.0	1.3	0.3	0.6	0.3	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2
11.0	0.0	0.0	0.3	0.6	0.3	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
12.0	0.3	0.0	0.3	0.0	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
13.0	0.3	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
14.0	0.0	0.0	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
15.0	0.0	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
16.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0	6.8	3.2	9.0	12.9	12.2	13.5	12.2	6.1	3.2	3.9	1.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	84.57

TOTAL NO. PAIRS OF DATA : 311
 MEAN CF WAVE HEIGHT : 2.44
 MAX CF WAVE HEIGHT : 6.00
 MIN CF WAVE HEIGHT : 0.10
 CORNU RATIO OF WAVE HEIGHT : 1.52
 MOST LOCATED AT WAVE HEIGHT : 1.52
 MEAN CF WAVE PERIOD : 8.15
 MAX CF WAVE PERIOD : 18.45
 MIN CF WAVE PERIOD : 3.71
 CORNU RATIO OF WAVE PERIOD : 2.05
 MOST LOCATED AT WAVE PERIOD : 7.00
 MEAN CF WAVE HEIGHT LESS THEN 14.0 SEC : 2.44

LOST NO. PAIRS OF DATA : 48 (15.43 %)
 VARIANCE OF WAVE HEIGHT : 1.45
 IT'S WAVE PERIOD : 5.96 AT TIME : 1986.12.22. 0: C
 IT'S WAVE PERIOD : 5.50 AT TIME : 1986.12.31. 6: C
 SKEWNESS OF WAVE HEIGHT : 0.24
 STANDARD DEVIATION OF WAVE PERIOD : 2.29

STANDARD DEVIATION OF WAVE HEIGHT : -3.02
 DC VALUE OF WAVE PERIOD : 32.66
 DC VALUE OF WAVE PERIOD : 263 (84.57 %)

表 III - 2 (b)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOUR															
UNIT : M AND SEC ----- WAVE HEIGHT (H1/3) AND PERIOD (T1/3) 2.00 PR DATA															
PERIOD	HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	%
4.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.0		0.0	0.6	1.9	3.9	5.8	5.8	1.9	3.5	1.0	0.0	0.3	0.0	0.0	0.0
8.0		1.0	1.6	6.4	10.3	10.0	2.6	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
9.0		1.9	2.9	5.5	3.2	2.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0		2.3	1.3	2.6	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11.0		1.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.0		0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13.0		0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.0		0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16.0		0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL NO. PAIRS OF DATA : 311 MEAN OF WAVE HEIGHT : 1.80 MAX OF WAVE HEIGHT : 5.20 MIN OF WAVE HEIGHT : 0.08 CORRU RATIO OF WAVE HEIGHT : 1.62 MOST LOCATED AT WAVE HEIGHT : 1.62 MEAN OF WAVE PERIOD : 7.72 MAX OF WAVE PERIOD : 15.53 MIN OF WAVE PERIOD : 5.86 CORRU RATIO OF WAVE PERIOD : 1.92 MOST LOCATED AT WAVE PERIOD : 7.00 MEAN OF WAVE HEIGHT LESS THEN 14.0 SEC : 1.50															
LAST NO. PAIRS OF DATA : 48 (15.43 %) VARIANCE OF WAVE HEIGHT : 0.66 IT'S WAVE PERIOD : 6.10 AT TIME : 1586.12.22. 0: 0 IT'S WAVE PERIOD : 11.66 AT TIME : 1586.12.31. 6: 0 SKENESS OF WAVE HEIGHT : 0.81 DC VALUE OF WAVE HEIGHT : 2.94 VARIANCE OF WAVE PERIOD : 1.63 IT'S WAVE HEIGHT : 0.14 IT'S WAVE HEIGHT : 2.05 SKENESS OF WAVE PERIOD : 5.25 DC VALUE OF WAVE PERIOD : 21.99 IT'S NO. : 263 (84.57 %)															
STANDARD DEVIATION OF WAVE HEIGHT : 0.93 STANDARD DEVIATION OF WAVE PERIOD : 1.28															

表 III - 3 (a)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOR																							
STATION DATE : 86.03.07/14:00-86.03.10/22:00																							
UNIT : M AND SEC ----- WAVE HEIGHT (HMAX) AND PERIOD (TMAX) 2.00 HR DATA																							
PERIOD	HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	%
4.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0		2.4	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9
6.0		4.9	0.0	4.9	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2
7.0		2.4	9.8	2.4	4.9	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0
8.0		2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
9.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0		0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
11.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0		2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
16.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0		14.6	12.2	7.3	9.8	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.34
TOTAL NO. PAIRS OF DATA : 41																							
MEAN OF WAVE HEIGHT : 0.92																							
MAX OF WAVE HEIGHT : 2.39																							
MIN OF WAVE HEIGHT : 0.17																							
CORNU RATIO OF WAVE HEIGHT : 1.43																							
MOST LOCATED AT WAVE HEIGHT : 1.43																							
MEAN OF WAVE PERIOD : 7.58																							
MAX OF WAVE PERIOD : 15.66																							
MIN OF WAVE PERIOD : 5.32																							
CORNU RATIO OF WAVE PERIOD : 2.83																							
MOST LOCATED AT WAVE PERIOD : 7.00																							
MEAN OF WAVE HEIGHT LESS THEN 14.0 SEC : 0.92																							
LOST NO. PAIRS OF DATA : 22 (53.66 %)																							
VARIANCE OF WAVE HEIGHT : 0.41																							
IT'S WAVE PERIOD : 7.83 AT TIME : 1986. 3.10.14: 0																							
IT'S WAVE PERIOD : 15.66 AT TIME : 1986. 3. 9.16: 0																							
SKEWNESS OF WAVE HEIGHT : 1.15																							
DC VALUE OF WAVE HEIGHT : -9.04																							
STANDARD DEVIATION OF WAVE PERIOD : 4.76																							
DC VALUE OF WAVE PERIOD : 12.56																							
IT'S NO. : 15 (46.34 %)																							
STANDARD DEVIATION OF WAVE PERIOD : 2.18																							
DC VALUE OF WAVE PERIOD : 80.44																							
STANDARD DEVIATION OF WAVE HEIGHT : 0.64																							

表 III - 3 (b)

SY-W DATE : 86.03.07/14:00-86.03.10/22:00

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOUR

UNIT : M AND SEC ----- WAVE HEIGHT (H1/3) AND PERIOD (T1/3) 2.00 HR DATA

PERIOD HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	%
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%	15.5	12.2	12.2	12.2	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.34

TOTAL NO. PAIRS OF DATA : 41
 MEAN OF WAVE HEIGHT : 0.71
 MAX OF WAVE HEIGHT : 1.74
 MIN OF WAVE HEIGHT : 0.14
 CORNU RATIO OF WAVE HEIGHT : 1.35
 MOST LOCATED AT WAVE HEIGHT : 1.63
 MEAN OF WAVE PERIOD : 9.48
 MAX OF WAVE PERIOD : 17.48
 MIN OF WAVE PERIOD : 6.21
 CORNU RATIO OF WAVE PERIOD : 1.63
 MOST LOCATED AT WAVE PERIOD : 14.0 SEC
 MEAN OF WAVE HEIGHT LESS THAN 14.0 SEC : 0.71

LOST NO. PAIRS OF DATA : 22 (53.66 %)
 VARIANCE OF WAVE HEIGHT : 0.23
 IT'S WAVE PERIOD : 8.26 AT TIME : 1986. 3.10.14: C
 IT'S WAVE PERIOD : 10.87 AT TIME : 1986. 3. 9.16: 0
 SKEWNESS OF WAVE HEIGHT : 0.75
 CC VALUE OF WAVE HEIGHT : -13.79

STANDARD DEVIATION OF WAVE HEIGHT : 0.48
 STANDARD DEVIATION OF WAVE PERIOD : 3.09
 DC VALUE OF WAVE PERIOD : 3.62

表 III - 4 (a)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOR																							
UNIT : M AND SEC		ST-W DATE : 26.04.08/18:00-26.04.24/08:00																					
-----		WAVE HEIGHT (HMAX) AND PERIOD (TMAX) 2.00 HR DATA																					
PERIOD	HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	X
4.0																							
5.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0		1.6	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1
7.0		5.3	3.7	1.6	1.1	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8
8.0		18.6	9.6	4.8	5.9	3.7	2.7	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.8
9.0		8.5	2.7	0.0	3.2	1.1	0.0	2.7	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1
10.0		1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1
11.0		1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
12.0		1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
13.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.0		1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
15.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16.0		0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
17.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19.0		0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
20.0		0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
21.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

35.9 16.5 6.4 10.1 5.9 3.2 3.7 1.1 0.5 70.0 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 87.77

TOTAL NO. PAIRS OF DATA : 188
 MEAN OF WAVE HEIGHT : 1.00
 MAX OF WAVE HEIGHT : 5.14
 MIN OF WAVE HEIGHT : 0.04
 CORNU RATIO OF WAVE HEIGHT : 1.55
 MOST LOCATED AT WAVE HEIGHT : 1.55
 MEAN OF WAVE PERIOD : 7.87
 MAX OF WAVE PERIOD : 19.67
 MIN OF WAVE PERIOD : 5.00
 CORNU RATIO OF WAVE PERIOD : 3.65
 MOST LOCATED AT WAVE PERIOD : 7.00
 MEAN OF WAVE HEIGHT LESS THEN 14.0 SEC : 1.00

LOST NO. PAIRS OF DATA : 23 (12.23 %)
 VARIANCE OF WAVE HEIGHT : 1.05
 IT'S WAVE PERIOD : 5.20 AT TIME : 1986. 4.12. 0: 0
 IT'S WAVE PERIOD : 7.03 AT TIME : 1986. 4.11. 8: 0
 SKENNESS OF WAVE HEIGHT : 2.61
 DC VALUE OF WAVE HEIGHT : -1.59

STANDARD DEVIATION OF WAVE PERIOD : 3.08
 IT'S WAVE HEIGHT : 0.53
 IT'S WAVE HEIGHT : 0.21
 SKENNESS OF WAVE PERIOD : 28.54
 DC VALUE OF WAVE PERIOD : 135.02
 IT'S NO. : 165 (87.77 %)

STANDARD DEVIATION OF WAVE HEIGHT : 1.76

表 III - 4 (b)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOR ST-W DATE : 66.04.08/18:00-66.04.24/08:00

UNIT : M AND SEC ----- WAVE HEIGHT (M1/3) AND PERIOD (T1/3) 2.00 HR DATA

PERIOD HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	%
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0	3.2	3.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4
7.0	16.5	9.0	8.0	4.8	2.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0
8.0	11.2	1.1	2.7	1.6	2.1	1.1	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.7
9.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3
10.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7
11.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
12.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1
13.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
14.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
15.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
16.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0	45.5	13.3	11.7	6.4	4.3	1.6	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.77

TOTAL NO. PAIRS OF DATA : 186
 MEAN OF WAVE HEIGHT : 0.73
 MAX OF WAVE HEIGHT : 3.61
 MIN OF WAVE HEIGHT : 0.03
 CORNU RATIO OF WAVE HEIGHT : 1.53
 MOST LOCATED AT WAVE HEIGHT : 1.53
 MEAN OF WAVE PERIOD : 8.66
 MAX OF WAVE PERIOD : 18.69
 MIN OF WAVE PERIOD : 6.12
 CORNU RATIO OF WAVE PERIOD : 2.21
 MOST LOCATED AT WAVE PERIOD : 2.21
 MEAN OF WAVE HEIGHT LESS THEN 14.0 SEC : 0.73
 LOST NO. PAIRS OF DATA : 23 (12.23 %)
 VARIANCE OF WAVE HEIGHT : 0.57
 IT'S WAVE PERIOD : 8.50 AT TIME : 1966. 4.12. 0: C
 IT'S WAVE PERIOD : 16.27 AT TIME : 1986. 4.11. 8: C
 SKEWNESS OF WAVE HEIGHT : 2.54
 VARIANCE OF WAVE PERIOD : 4.88
 IT'S WAVE HEIGHT : 0.04
 IT'S WAVE PERIOD : 0.21
 SKEWNESS OF WAVE PERIOD : 7.66
 VARIANCE OF WAVE PERIOD : 4.88
 IT'S NO. : 165 (87.77 %)
 STANDARD DEVIATION OF WAVE HEIGHT : 0.75
 STANDARD DEVIATION OF WAVE PERIOD : 2.21
 CC VALUE OF WAVE HEIGHT : -2.85
 CC VALUE OF WAVE PERIOD : 40.90

表 III - 5 (a)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOUR

SY-M DATE : 87.03.06/15:00-87.03.24/11:00

UNIT : M AND SEC ----- WAVE HEIGHT (HMAX) AND PERIOD (TMAX) 2.00 PR DATA

PERIOD	HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	%
4.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0		0.9	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
6.0		3.7	2.8	0.9	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8
7.0		6.5	3.3	2.3	4.7	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.1
8.0		5.6	6.0	2.3	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.3
9.0		4.2	1.4	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4
10.0		2.8	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7
11.0		1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
12.0		1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
13.0		0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
14.0		1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
15.0		0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
16.0		1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
17.0		0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
18.0		0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
19.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0		0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
21.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0		34.0	15.3	7.9	6.0	1.9	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.05

TOTAL NO. PAIRS OF DATA : 215
 MEAN CF WAVE HEIGHT : 0.71
 MAX OF WAVE HEIGHT : 3.09
 MIN OF WAVE HEIGHT : 0.07
 CORNU RATIO OF WAVE HEIGHT : 1.63
 MOST LOCATED AT WAVE HEIGHT : 0.00, 0.50 IS 34.0%
 MEAN CF WAVE PERIOD : 9.12
 MAX OF WAVE PERIOD : 20.00
 MIN OF WAVE PERIOD : 5.08
 CORNU RATIO OF WAVE PERIOD : 1.97
 MOST LOCATED AT WAVE PERIOD : 7.00, 8.00 IS 18.1%
 MEAN OF WAVE HEIGHT LESS THEN 14.0 SEC : 0.71
 ITS NO. : 142 (66.05 %)

LEST NO. PAIRS OF DATA : 73 (33.95 %)

VARIANCE OF WAVE HEIGHT : 0.35
 IT'S WAVE PERIOD : 8.59 AT TIME : 1587.3:0
 IT'S WAVE PERIOD : 13.50 AT TIME : 1527.3:0
 SKEWNESS OF WAVE HEIGHT : 3.00
 STANDARD DEVIATION OF WAVE PERIOD : 2.87
 STANDARD DEVIATION OF WAVE HEIGHT : 3.56
 CC VALUE OF WAVE PERIOD : 25.69
 CC VALUE OF WAVE HEIGHT : 142 (66.05 %)

表 III - 5 (b)

BIVARIATE DISTRIBUTION OF WAVE HEIGHT AND PERIOD AT TAI-CHUNG HARBOUR ST-H DATE : 87.03.06/15:00-87.03.24/11:00

UNIT : M AND SEC ----- WAVE HEIGHT (H1/3) AND PERIOD (T1/3) 2.00 HR DATA

PERIOD HEIGHT	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	%
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0	0.0	0.5	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
7.0	4.7	3.3	0.9	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8
8.0	5.6	5.1	5.6	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.2
9.0	5.3	4.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4
10.0	6.0	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4
11.0	5.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
12.0	1.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
13.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
14.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
15.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
16.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
17.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
18.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
19.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>22.0																						66.05

TOTAL NO. PAIRS OF DATA : 215
 MEAN CF WAVE HEIGHT : 0.54
 MAX CF WAVE HEIGHT : 2.05
 MIN CF WAVE HEIGHT : 0.04
 CORNU RATIO CF WAVE HEIGHT : 1.69
 MOST LOCATED AT WAVE HEIGHT : 1.69
 MEAN CF WAVE PERIOD : 10.10
 MAX CF WAVE PERIOD : 15.93
 MIN CF WAVE PERIOD : 6.64
 CORNU RATIO CF WAVE PERIOD : 1.90
 MOST LOCATED AT WAVE PERIOD : 8.00
 MEAN CF WAVE HEIGHT LESS THAN 14.0 SEC : 0.54

LOST NO. PAIRS OF DATA : 73 (33.95 %)
 VARIANCE OF WAVE HEIGHT : 0.22
 IT'S WAVE PERIOD : 7.17 AT TIME : 1987. 3.15.15: C
 IT'S WAVE PERIOD : 16.75 AT TIME : 1987. 3. 7.23: C
 SKEWNESS OF WAVE HEIGHT : 2.70
 CC VALUE OF WAVE HEIGHT : 1.02

STANDARD DEVIATION OF WAVE HEIGHT : 0.46
 STANDARD DEVIATION OF WAVE PERIOD : 2.80
 DC VALUE OF WAVE PERIOD : 21.14
 IT'S NO. : 142 (66.05 %)

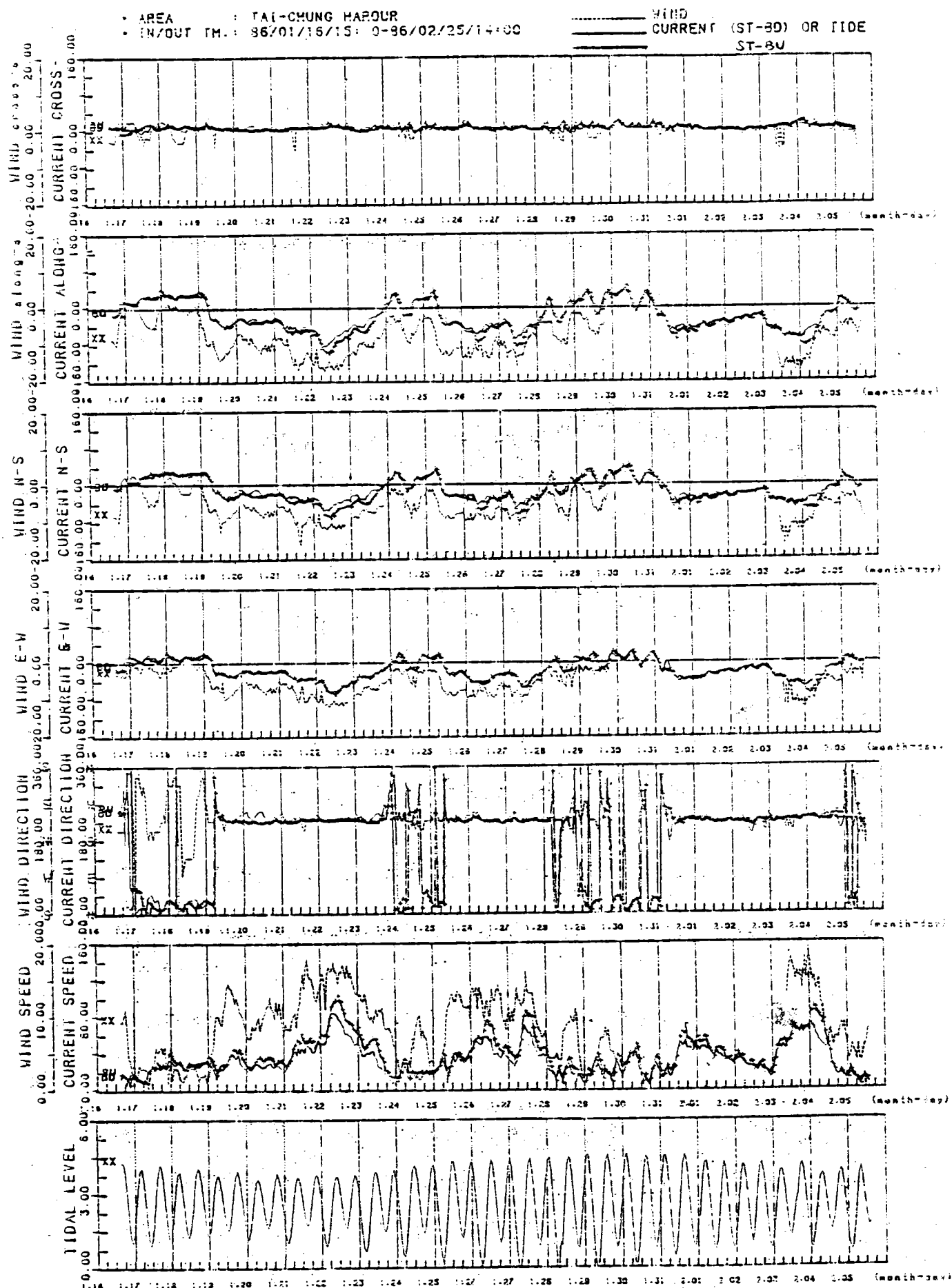


圖 I - 1 (a) - 87 -

AREA : TAI-CHUNG HARBOR
IN/OUT TM.: 88/01/16/15: 0-88/02/25/14:00

WIND
CURRENT (ST-80) OR TIDE
ST-84

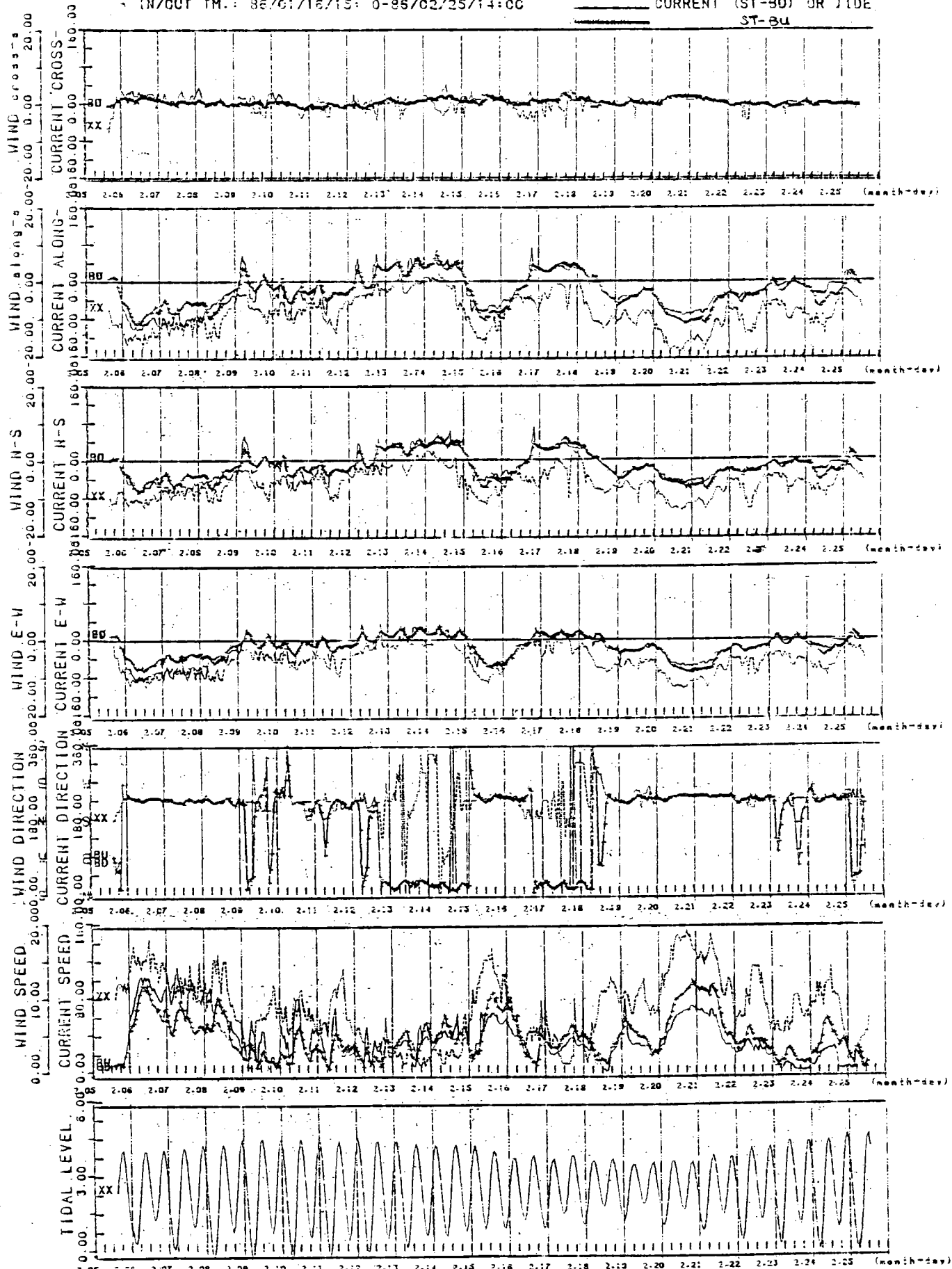


圖 I - 1 (b - 88 -

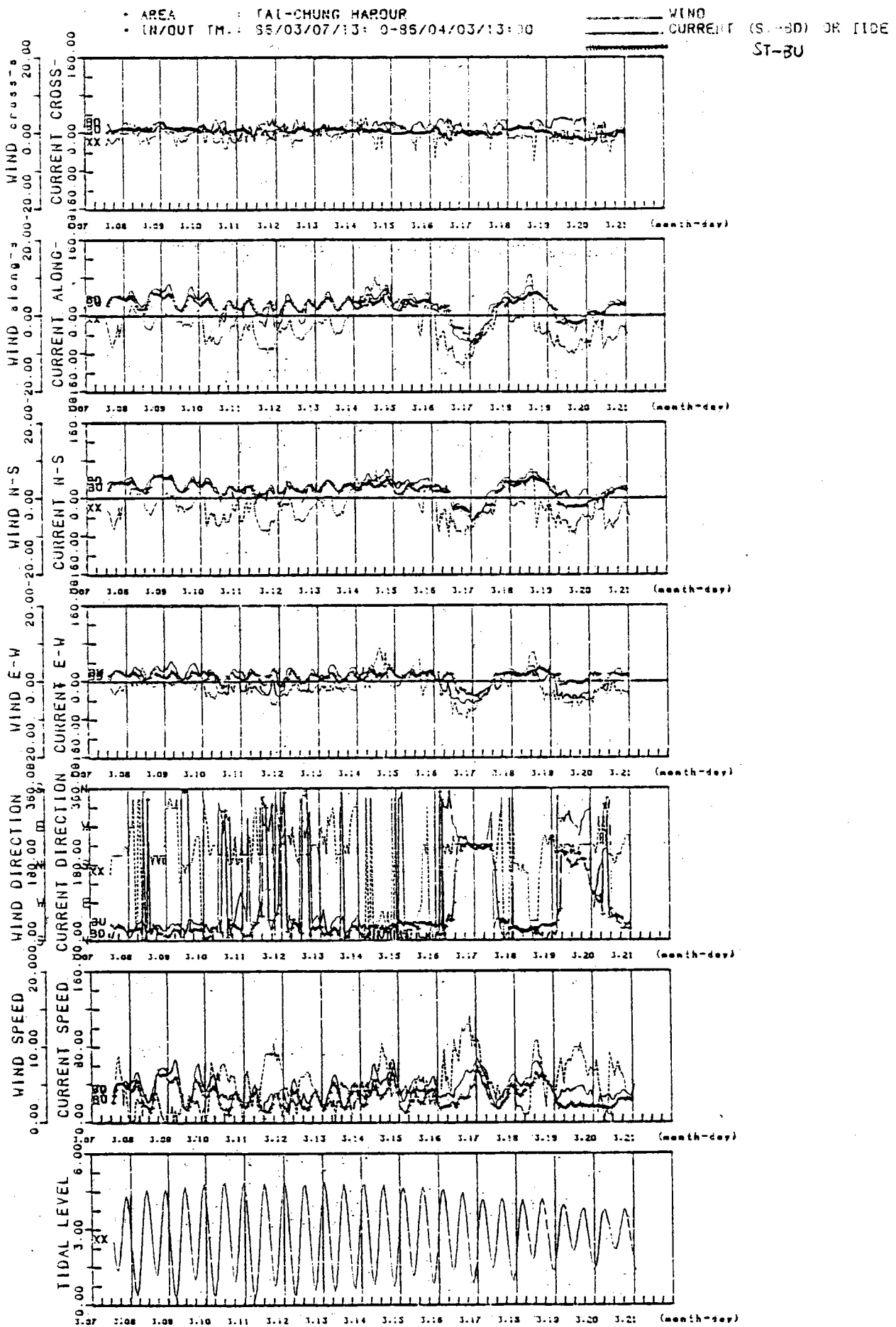


圖 I - 2 (a) - 89 -

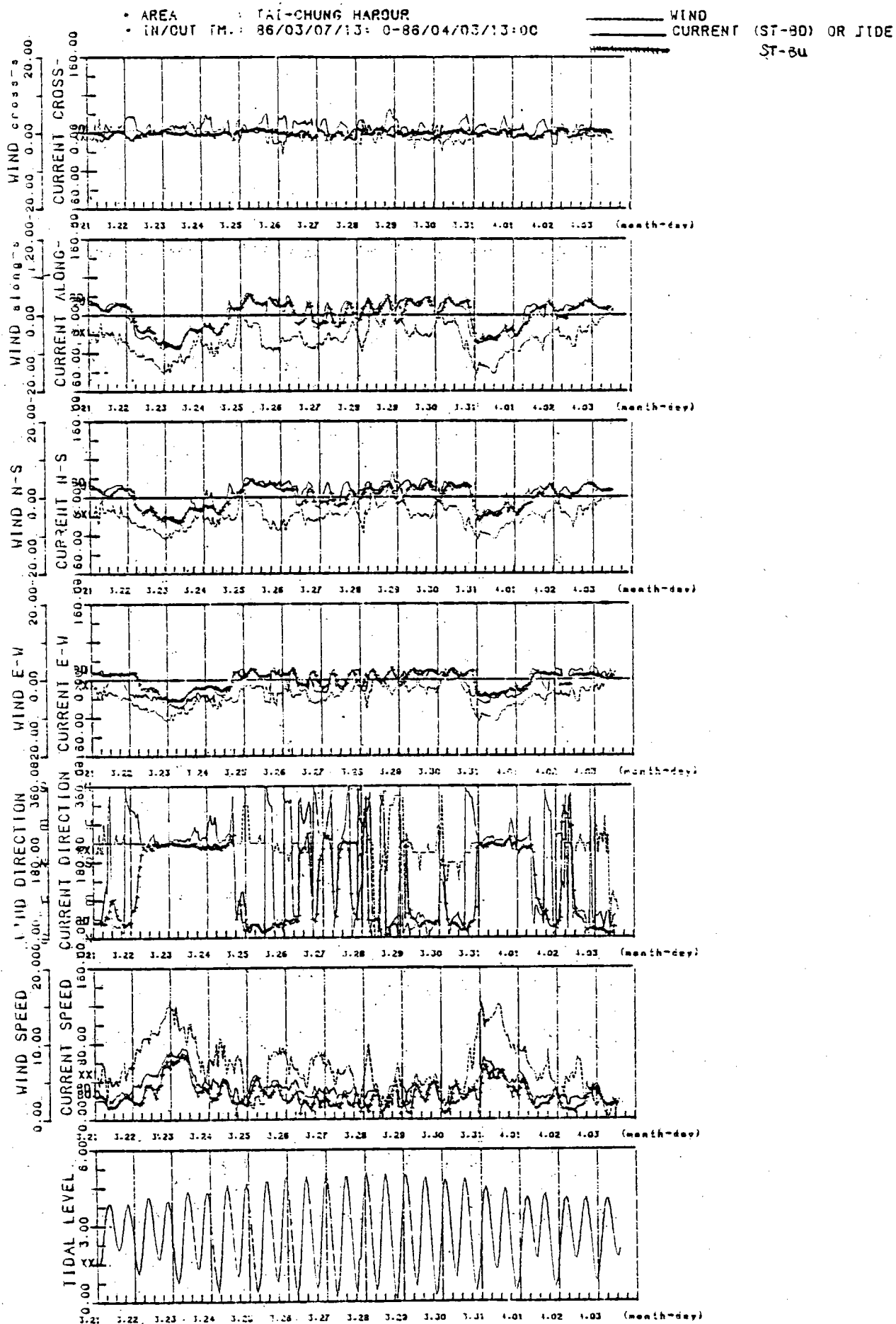


圖 I - 2 (b) - 90 -

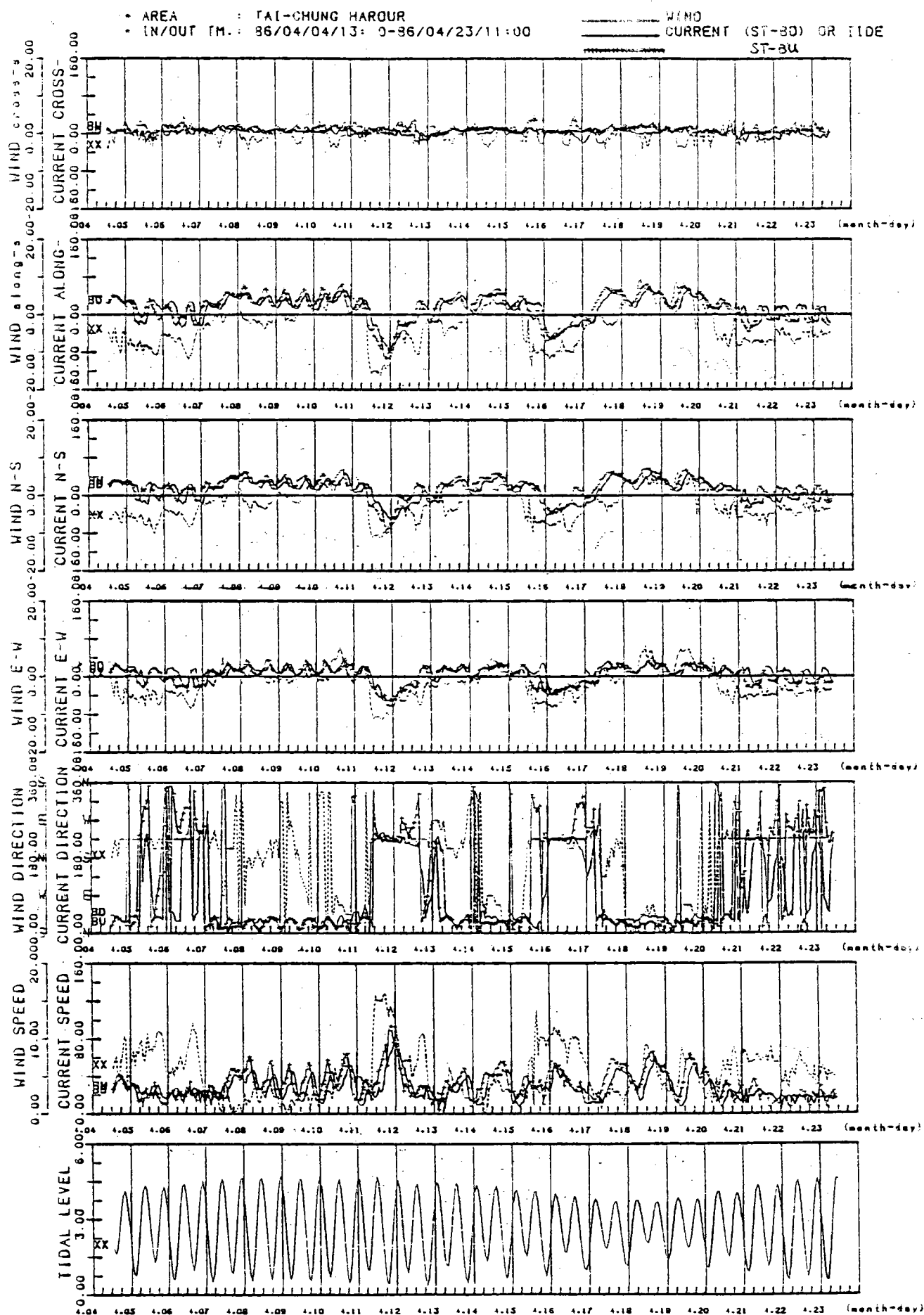


圖 I - 3 - 91 -

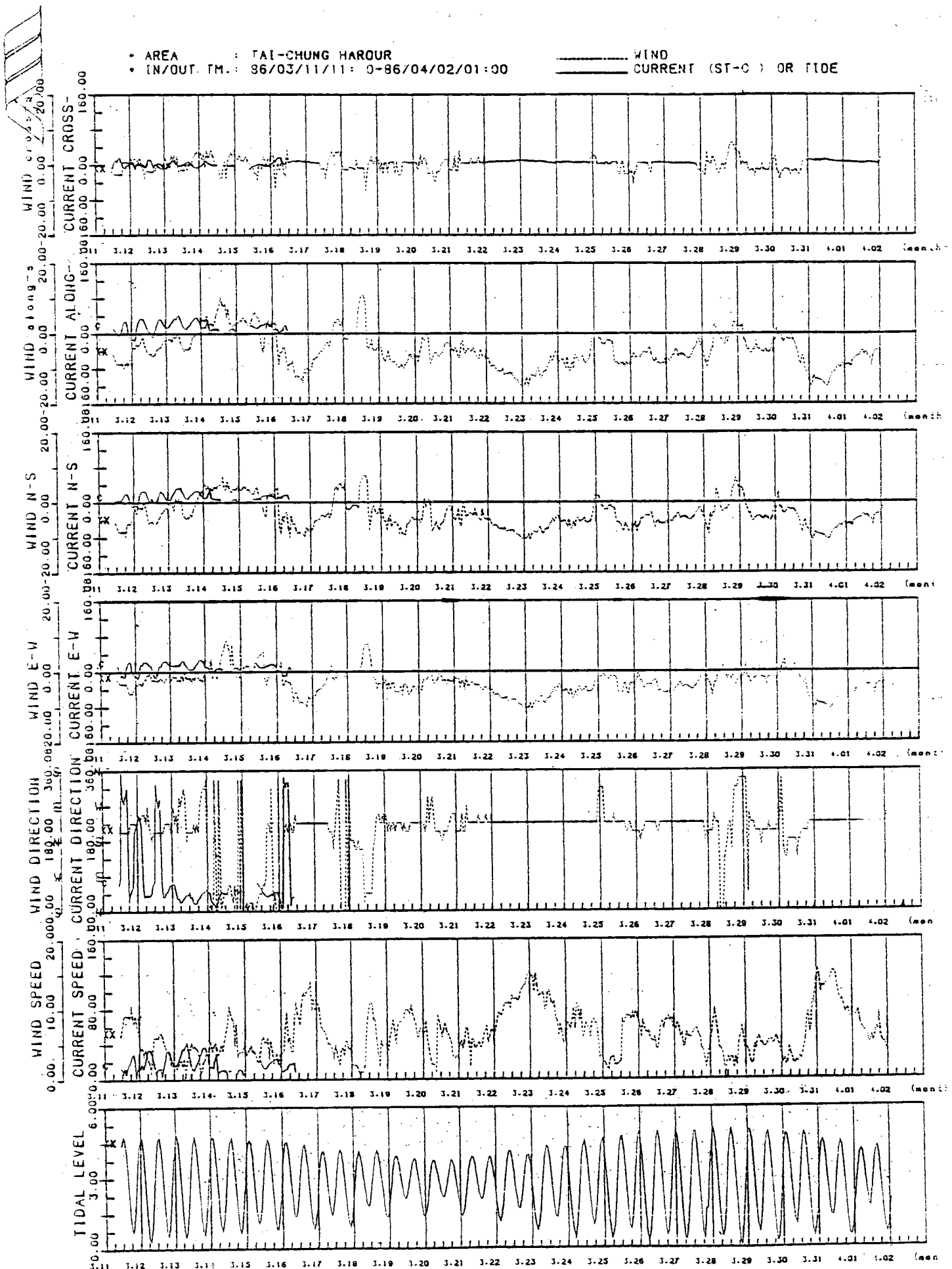


圖 I - 4 - 92 -

• AREA : TAI-CHUNG HAROUR
 • IN/OUT TM.: 86/01/29/14: 0-86/03/06/16:00

—— WIND
 —— CURRENT (ST-0) OR TIDE

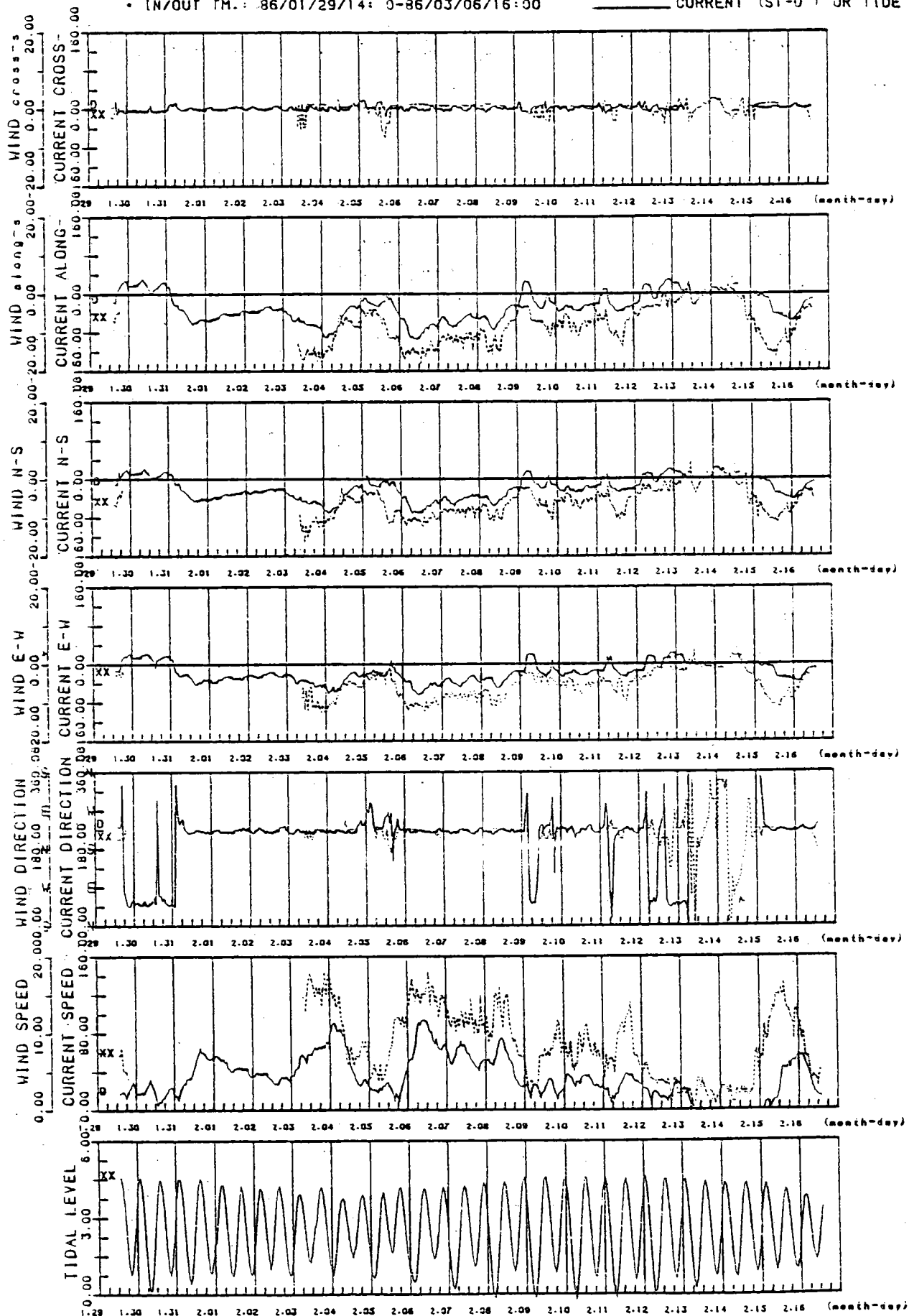


圖 I - 5 (2) - 93 -

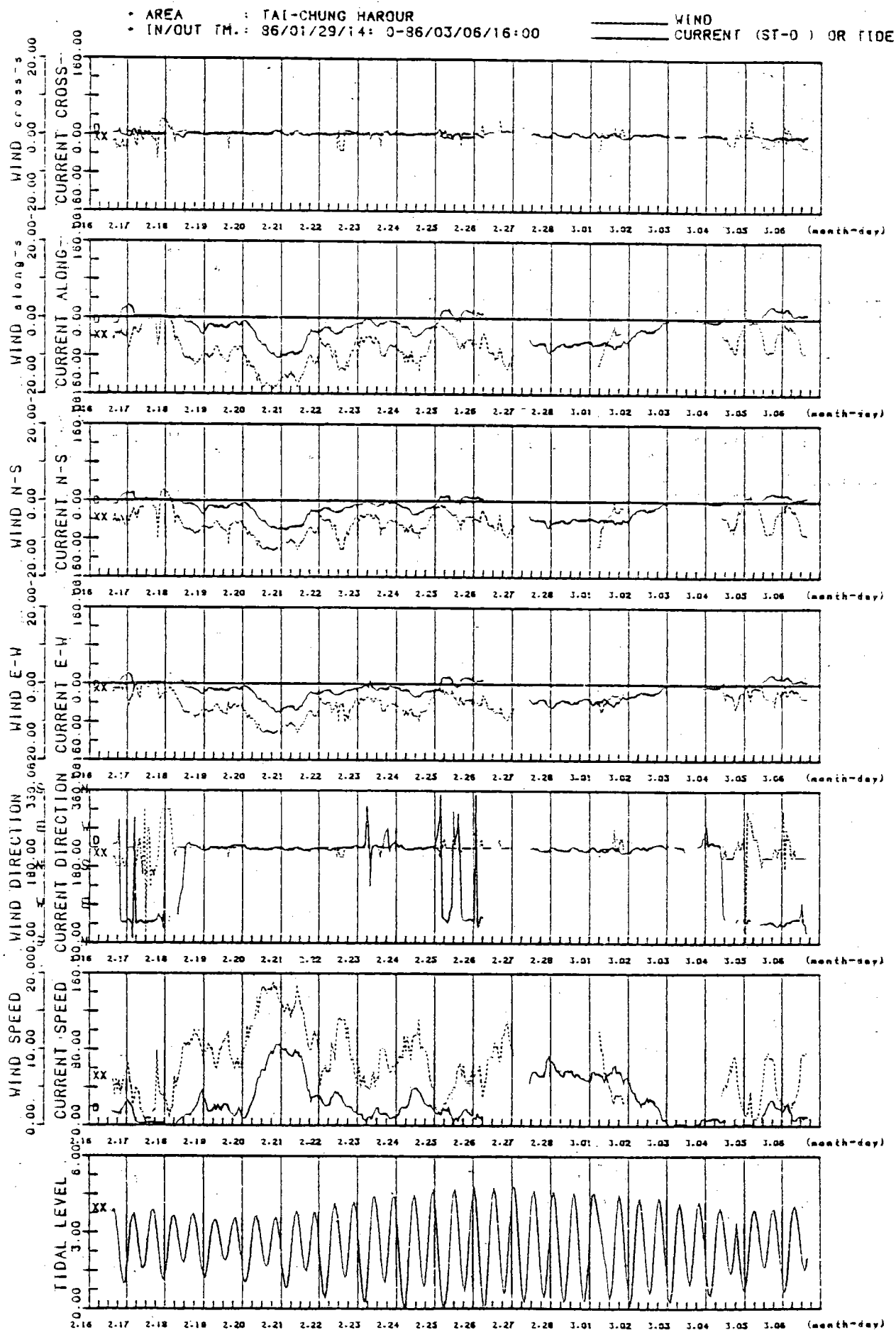


圖 I - 5 (b)

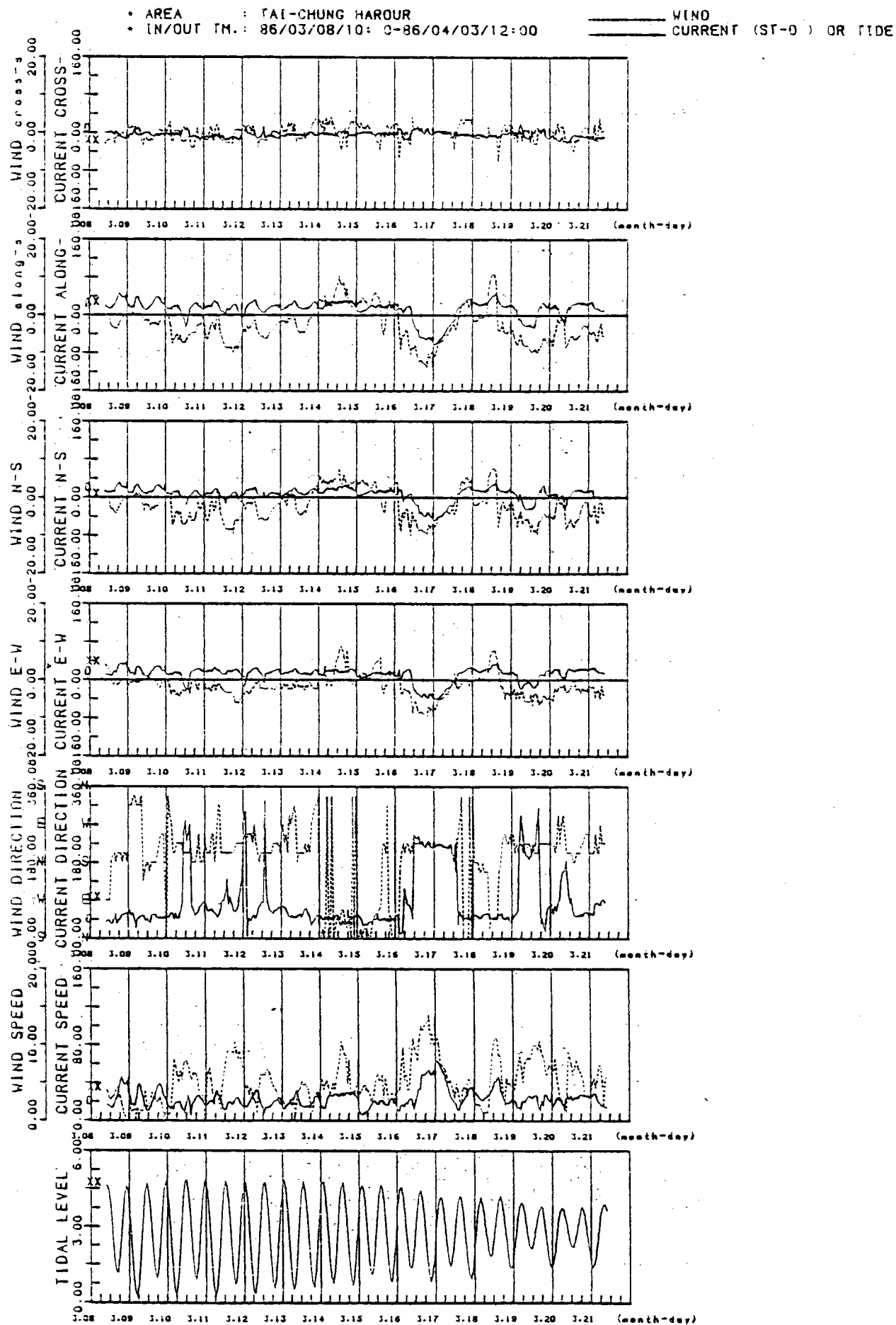
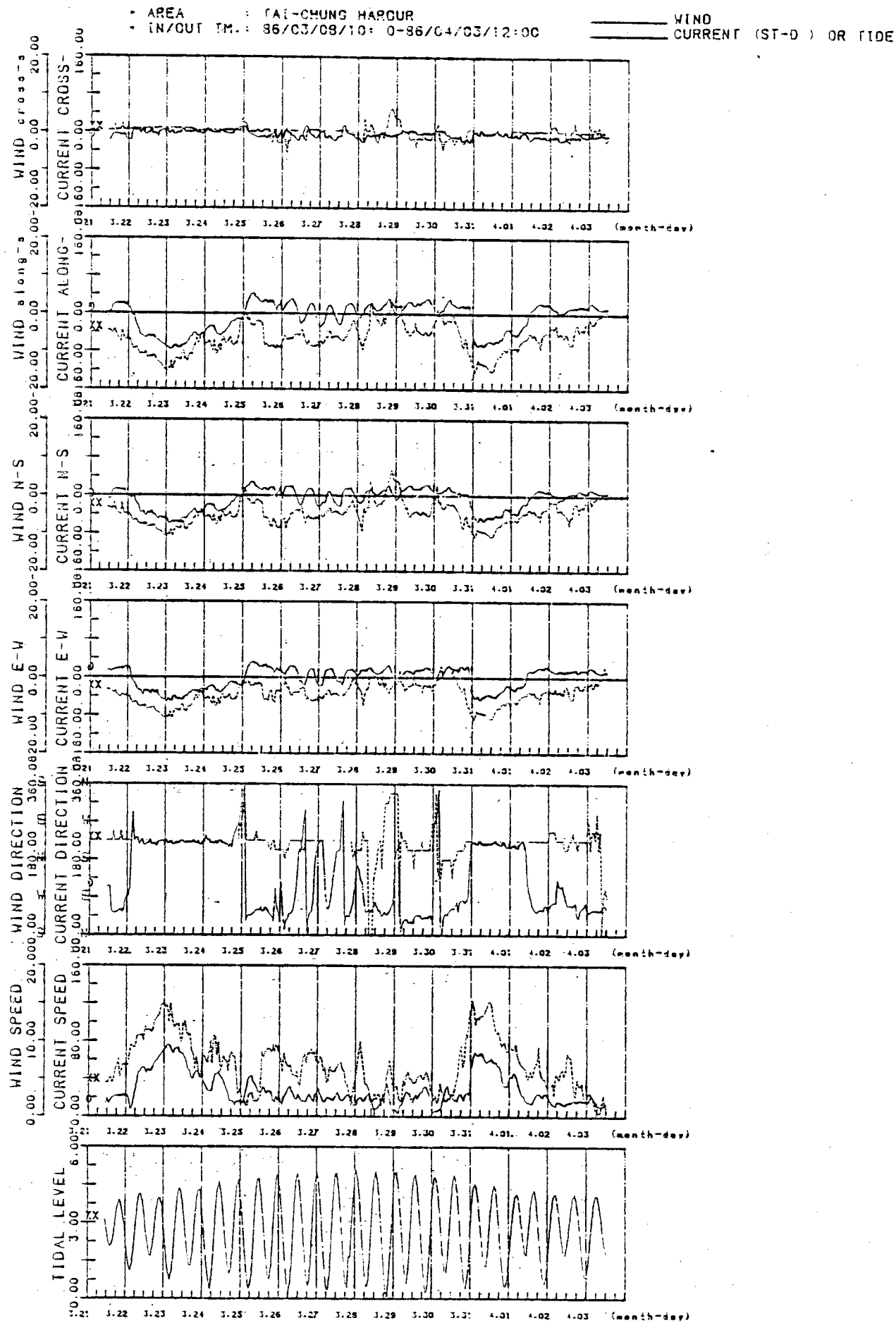
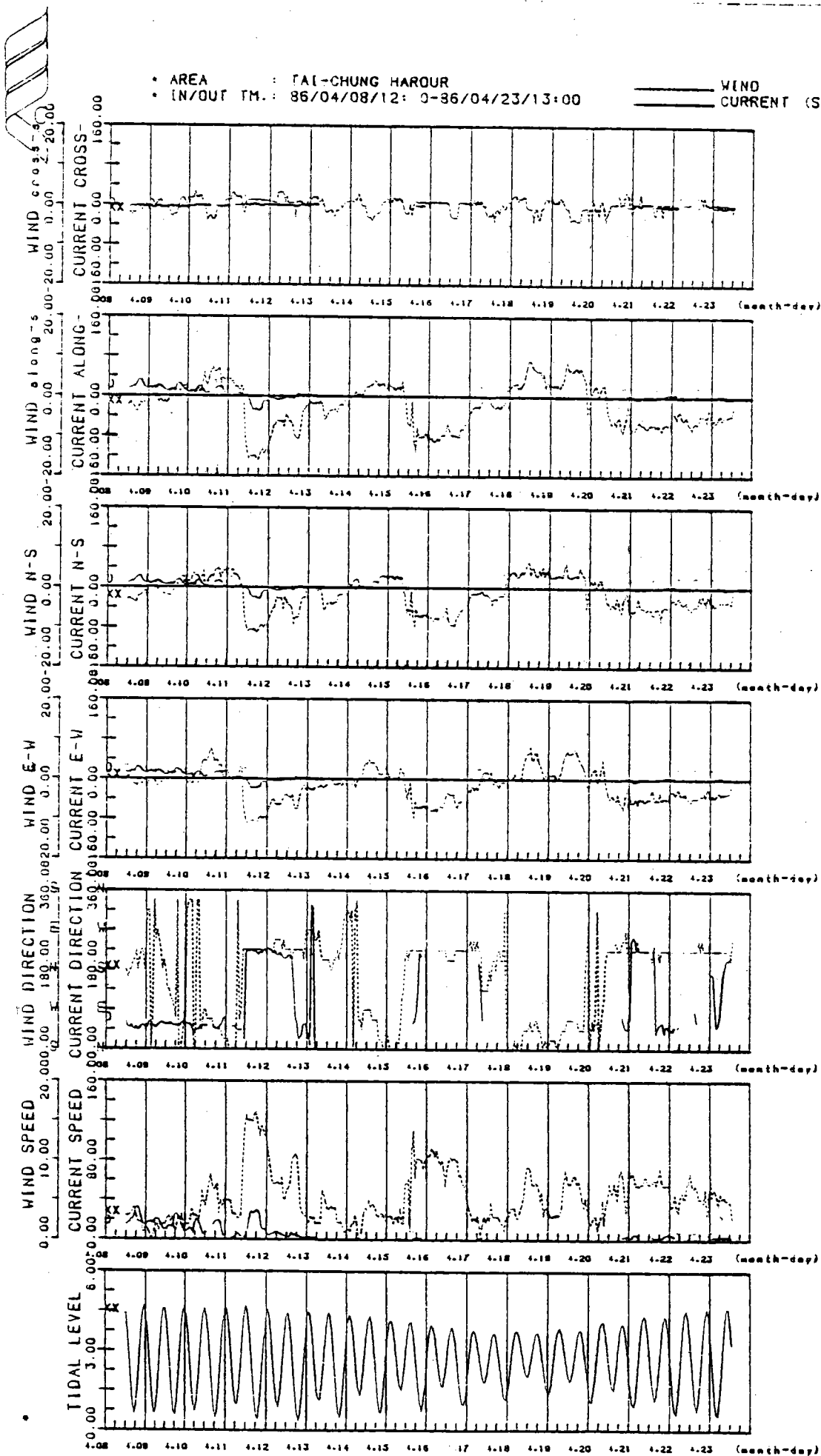


圖 I - 6 (a - 95 -



• AREA : TAI-CHUNG HARBOUR
• IN/OUT TM.: 86/04/08/12: 0-86/04/23/13:00

WIND
CURRENT (ST-0) OR TIDE



臺灣技術研究所

• AREA : TAI-CHUNG HARBOUR
• IN/OUT TM.: 85/12/27/13: 0-86/01/18/11:00

—— WIND
—— CURRENT (ST-E) OR TIDE

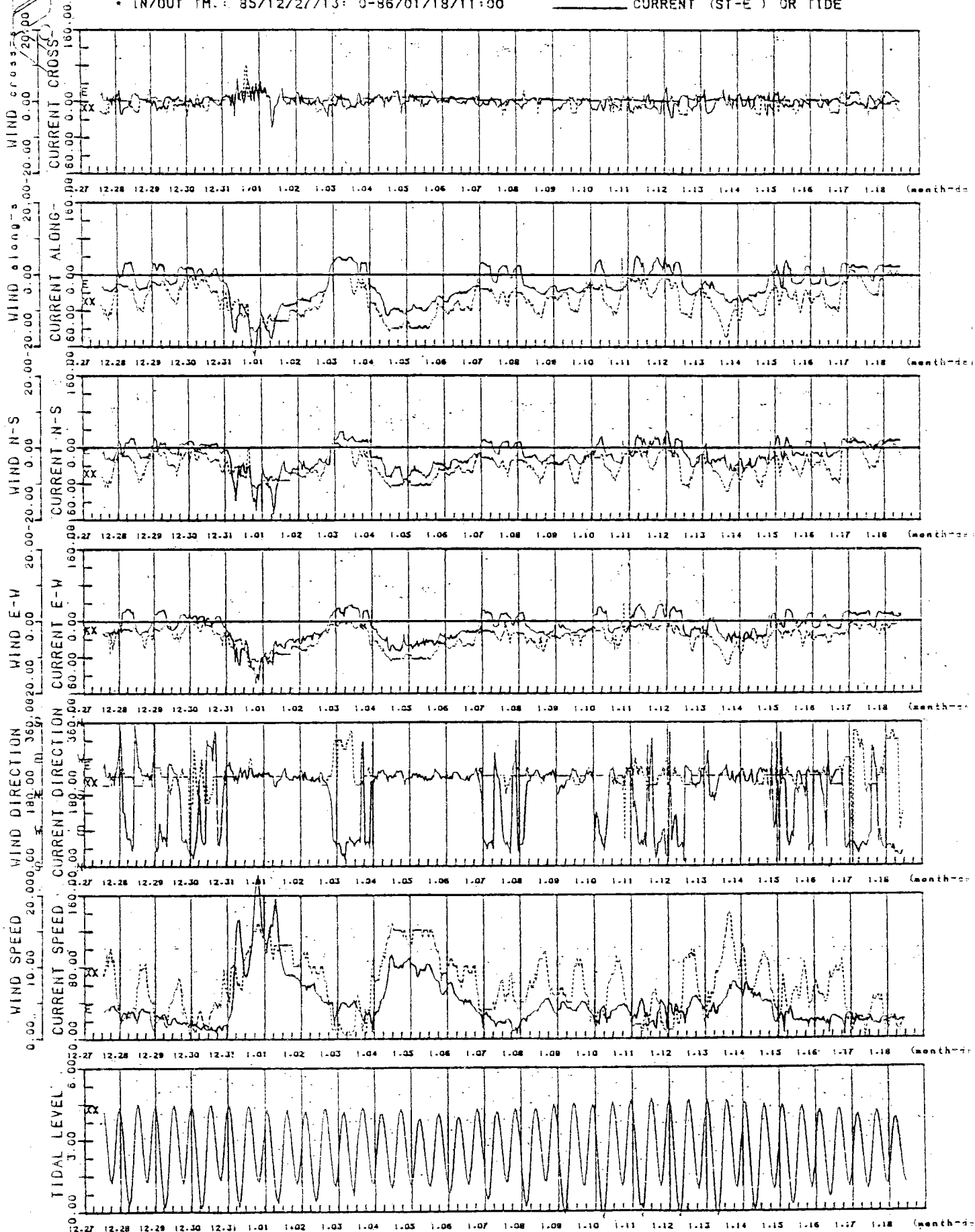


圖 I - 8 - 98 -

0352

• AREA : TAI-CHUNG HAROUR
 • IN/OUT TM.: 86/01/03/12: 0-86/01/05/23:00

===== WIND
 ===== CURRENT (ST-F) OR TIDE

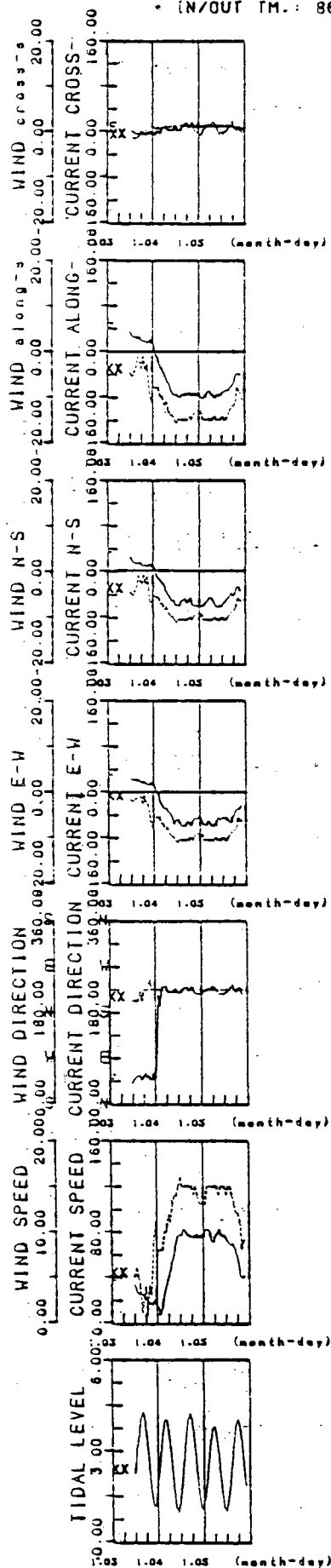
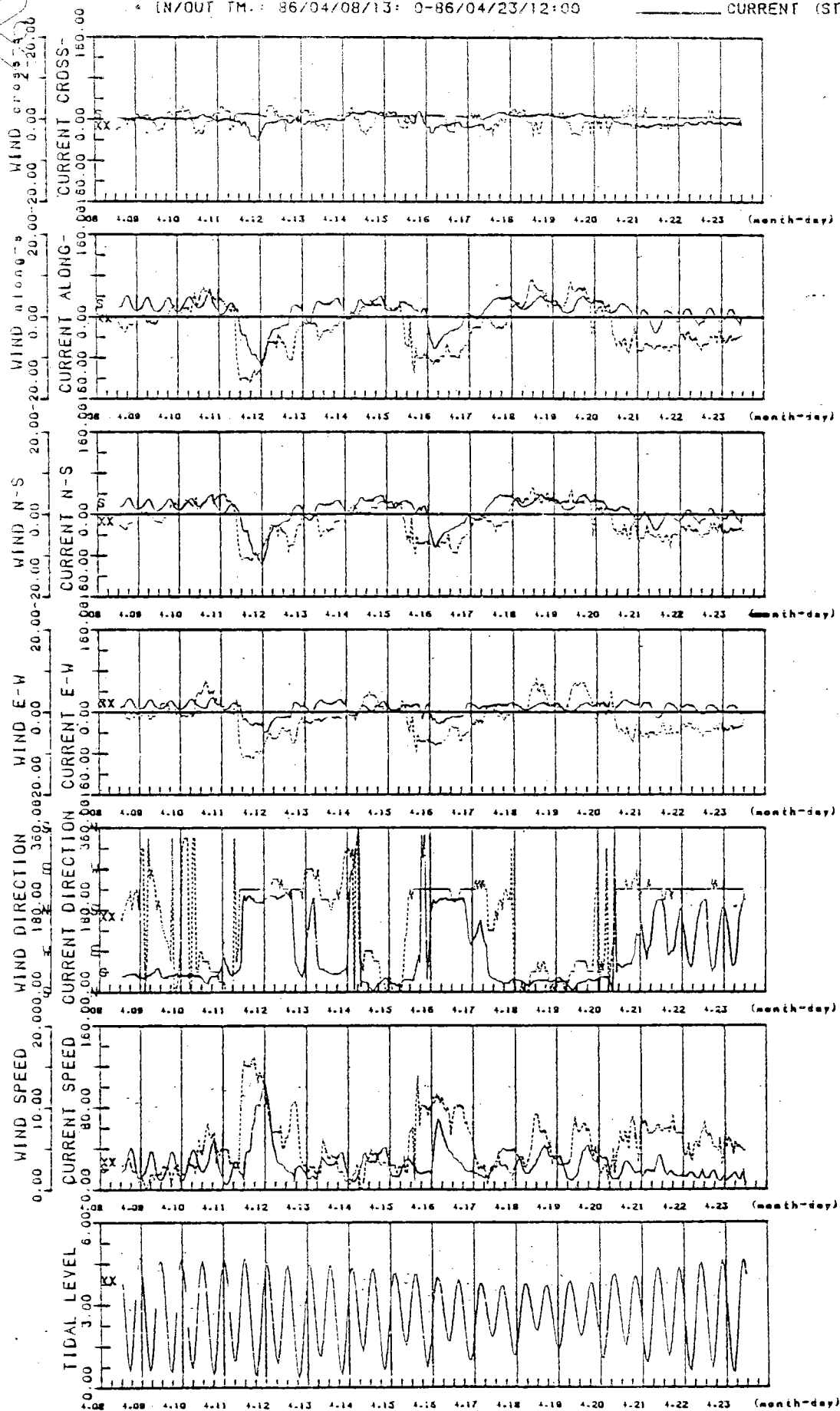


圖 I - 9



* AREA : TAI-CHUNG HARBOUR
 * IN/OUT TM. : 86/04/08/13: 0-86/04/23/12:00

—— WIND
 —— CURRENT (ST-S) OR TIDE



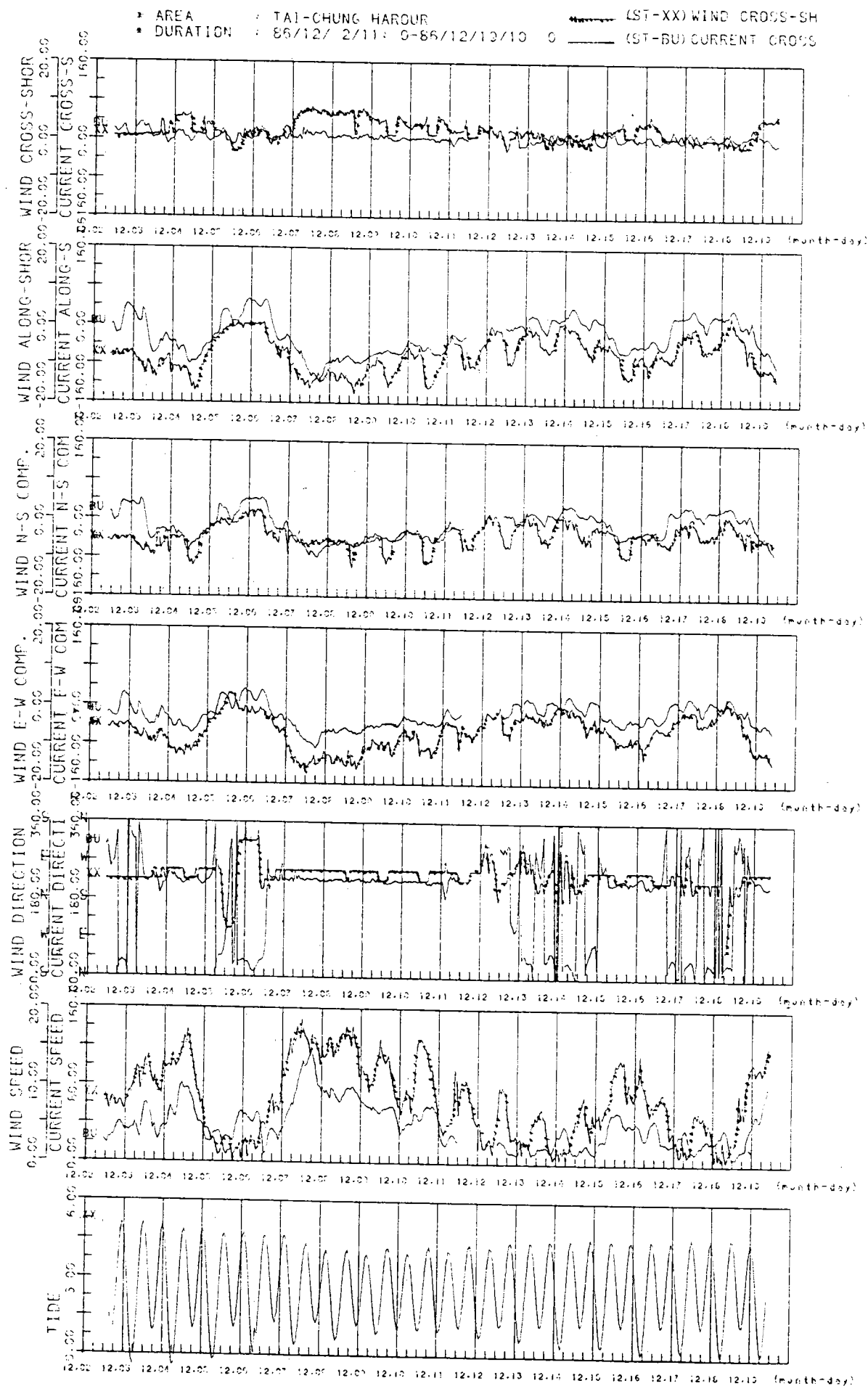


圖 I - 11 (a) - 101 -

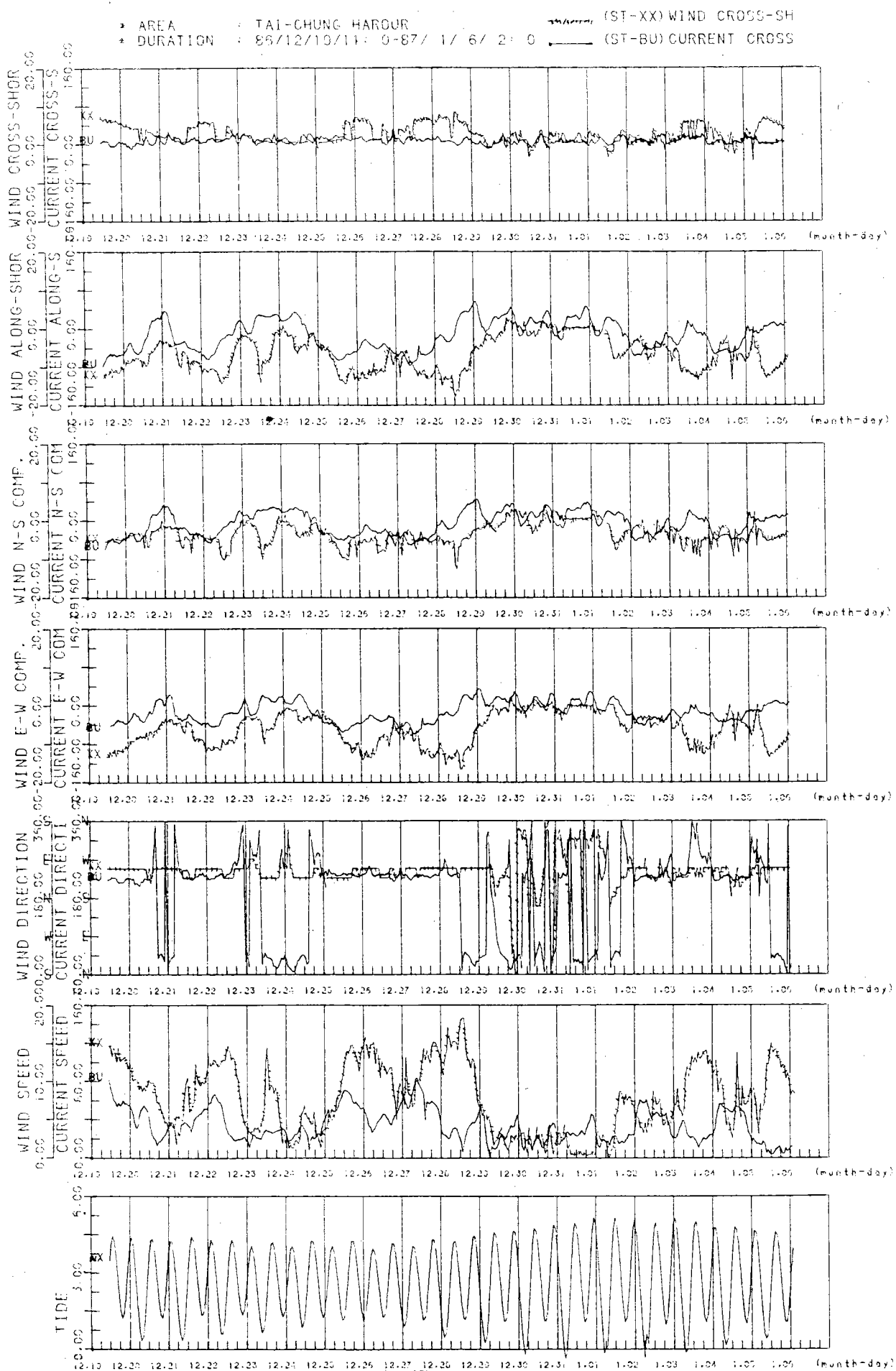


圖 I - 11 (h) - 102 -

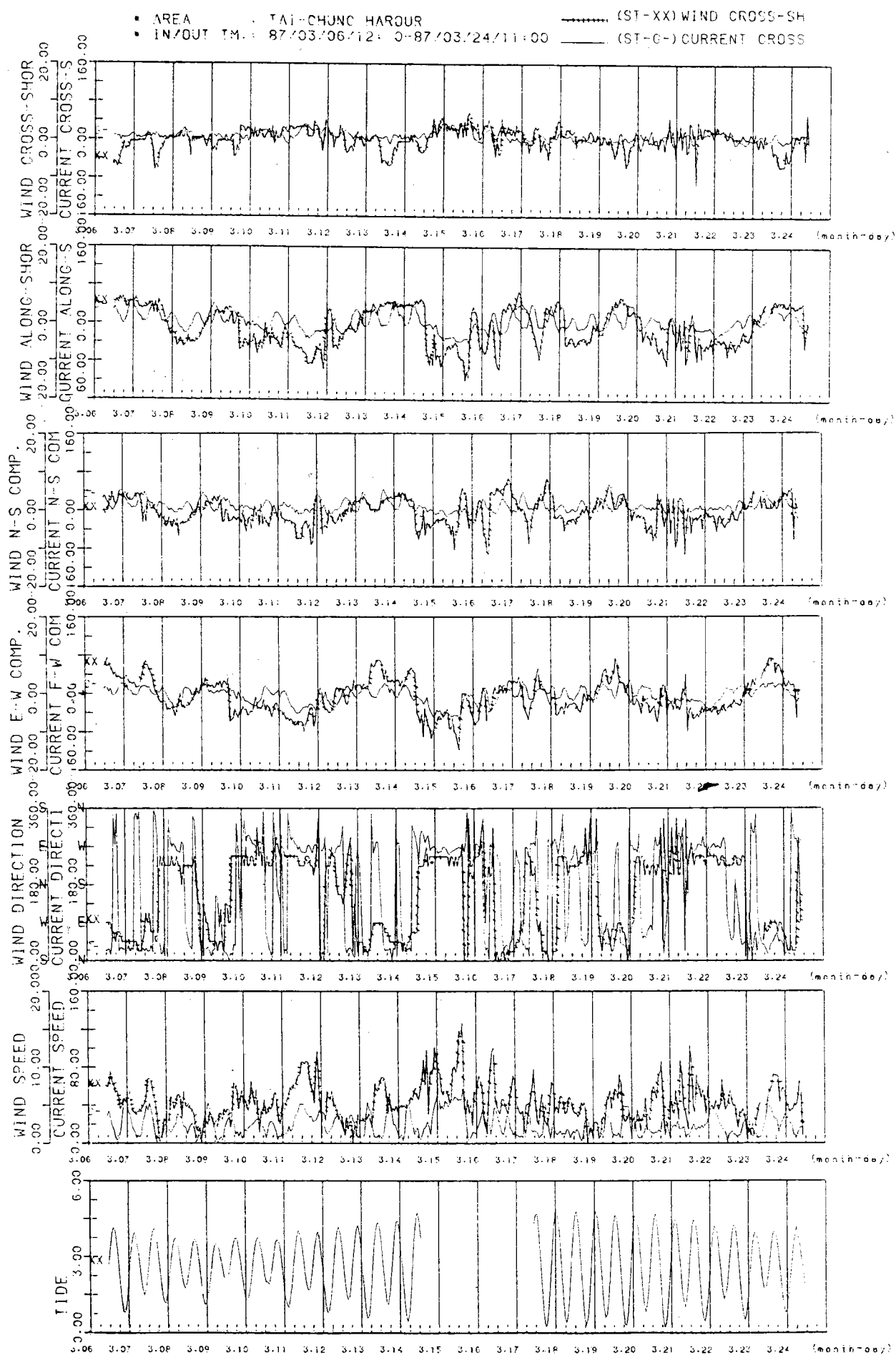
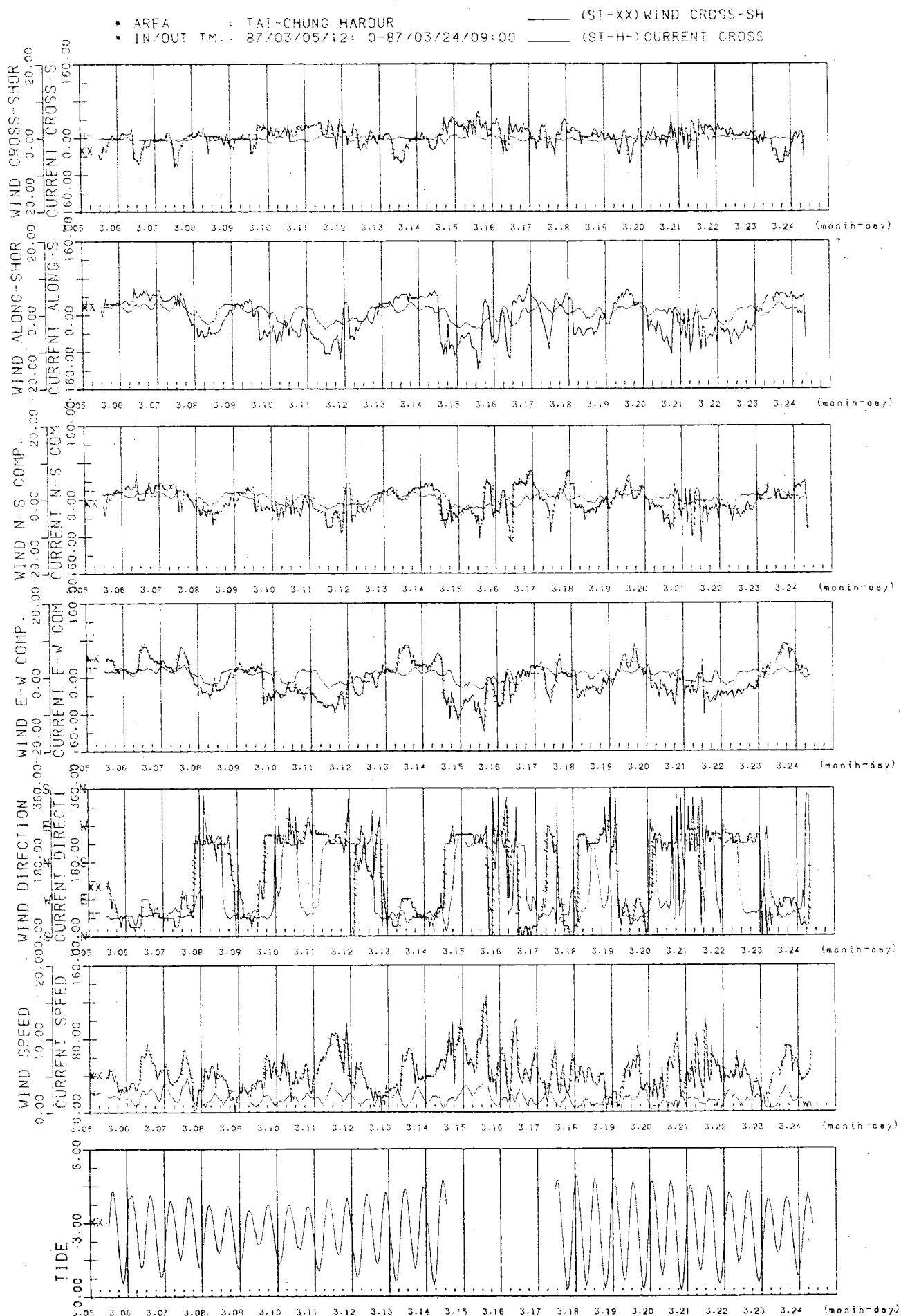


圖 I - 12 - 103 -

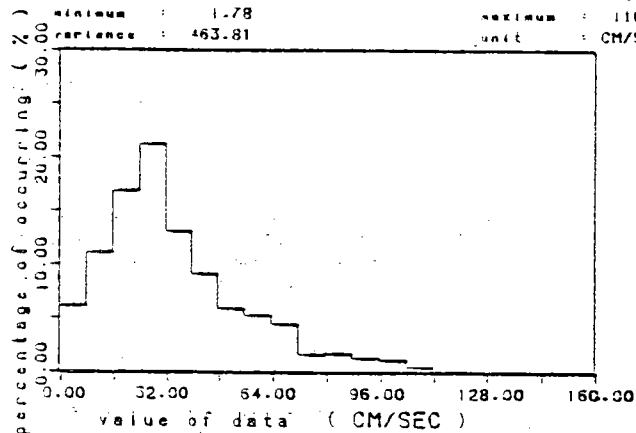


附 圖 II

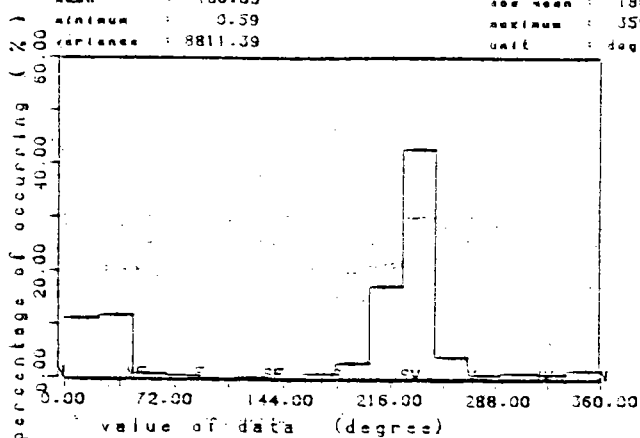
流速與相對應風速統計方塊圖

圖 號	時 間	測 站	備 註
II - 1	86/01/16-02/25	BU & BD	
II - 2	86/03/07-04/03	BU & BD	
II - 3	86/04/04-04/23	BU & BD	
II - 4	86/03/11-04/02	C	
II - 5	86/01/29-03/06	D	
II - 6	86/03/08-04/03	D	
II - 7	86/04/08-04/23	D	
II - 8	85/12/27-86/01/18	E	
II - 9	86/01/03-01/05	F	
II - 10	86/04/08-04/23	S	
II - 11	86/12/02-12/11	BU	
II - 12	86/12/19-87/01/06	BU	
II - 13	87/03/06-03/24	G	
II - 14	87/03/06-03/24	H	

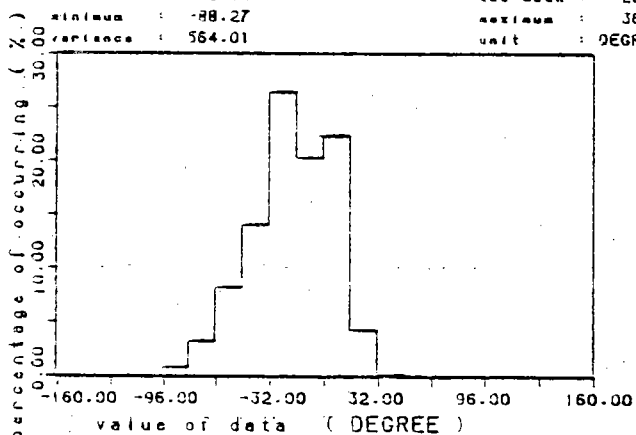
histogram of CURRENT SPEED
 area : TAI-CHUNG HAROUR station : 30-01
 duration : 86/01/16/15: -86/02/25/14 total no.: 960 (960)
 mean : 34.79 obs mean : 34.79
 minimum : 1.78 maximum : 116.72
 variance : 463.81 unit : CM/SEC



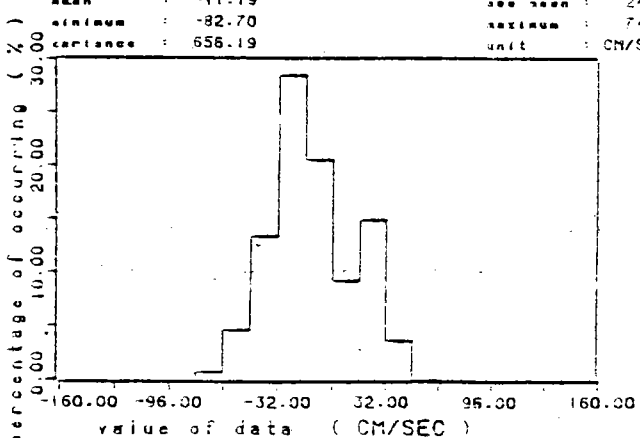
histogram of current direction (north=0 degree)
 area : TAI-CHUNG HAROUR station : 30-01
 duration : 86/01/16/15: -86/02/25/14 total no.: 960 (960)
 mean : 180.35 obs mean : 180.35
 minimum : 0.59 maximum : 359.78
 variance : 8811.39 unit : degree



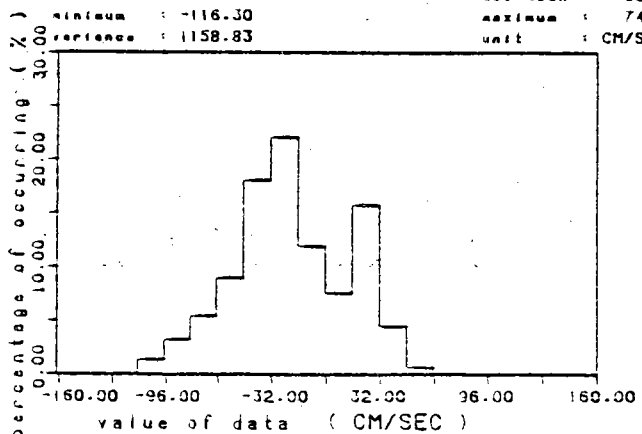
histogram of CURRENT E-W COMP.
 area : TAI-CHUNG HAROUR station : 30-01
 duration : 86/01/16/15: -86/02/25/14 total no.: 960 (960)
 mean : -18.14 obs mean : 23.47
 minimum : -88.27 maximum : 36.16
 variance : 564.01 unit : DEGREE



histogram of CURRENT N-S COMP.
 area : TAI-CHUNG HAROUR station : 30-01
 duration : 86/01/16/15: -86/02/25/14 total no.: 960 (960)
 mean : -11.19 obs mean : 24.01
 minimum : -82.70 maximum : 74.43
 variance : 656.19 unit : CM/SEC



histogram of CURRENT ALONG-SHORE
 area : TAI-CHUNG HAROUR station : 30-01
 duration : 86/01/16/15: -86/02/25/14 total no.: 960 (960)
 mean : -20.23 obs mean : 33.18
 minimum : -116.30 maximum : 74.58
 variance : 1158.83 unit : CM/SEC



histogram of CURRENT CROSS-SHORE
 area : TAI-CHUNG HAROUR station : 30-01
 duration : 86/01/16/15: -86/02/25/14 total no.: 960 (960)
 mean : 6.70 obs mean : 8.12
 minimum : -31.29 maximum : 42.62
 variance : 61.40 unit : CM/SEC

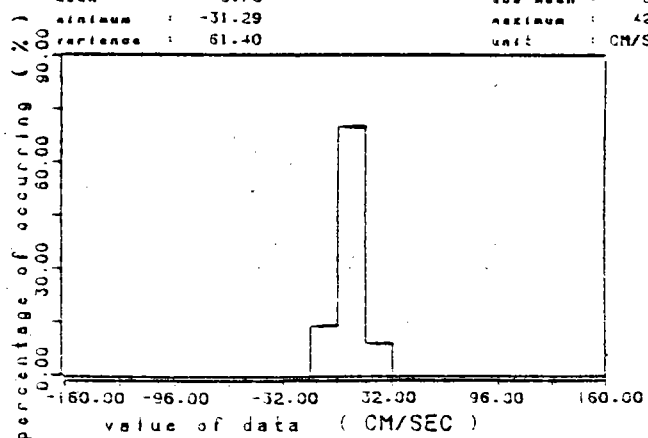
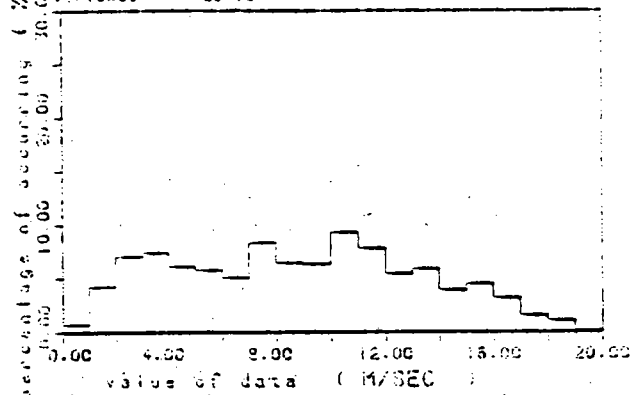
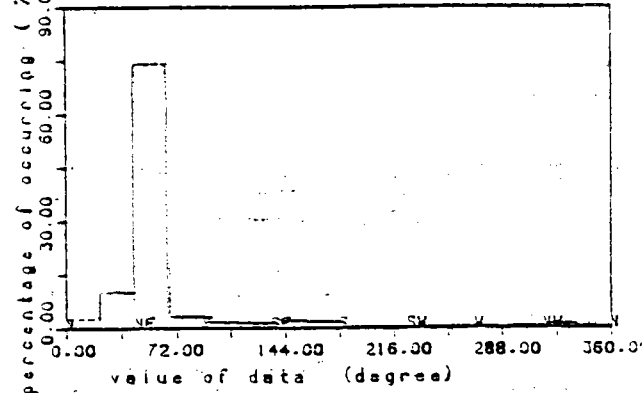


圖 II - 1 (a)

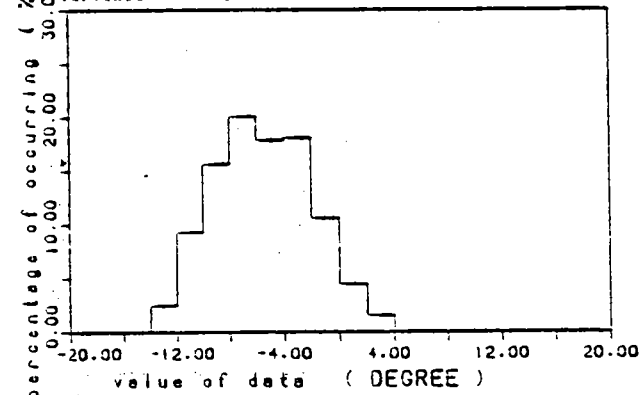
histogram of WIND SPEED
 area : TAI-CHUNG HARBOUR station : YX
 duration : 86/ 1/16/15-86/ 2/25/14 total no.: 951 (960)
 mean : 5.53 abs mean : 5.53
 minimum : 0.00 maximum : 10.00
 variance : 20.19 unit : M/SEC



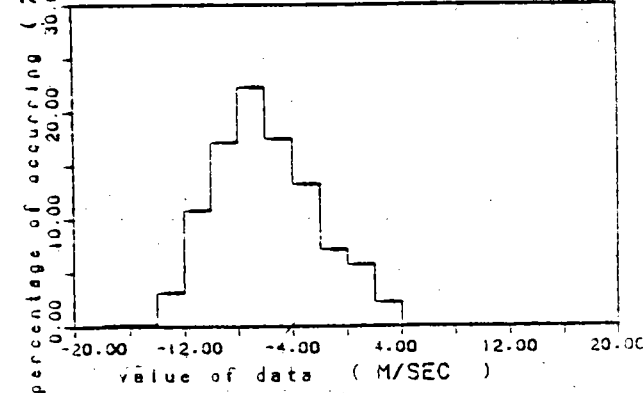
histogram of wind direction (north=0 degree)
 area : TAI-CHUNG HARBOUR station : YX
 duration : 86/ 1/16/15-86/ 2/25/14 total no.: 851
 mean : 55.76 abs mean : 5
 minimum : 0.00 maximum : 33
 variance : 2436.87 unit : deg



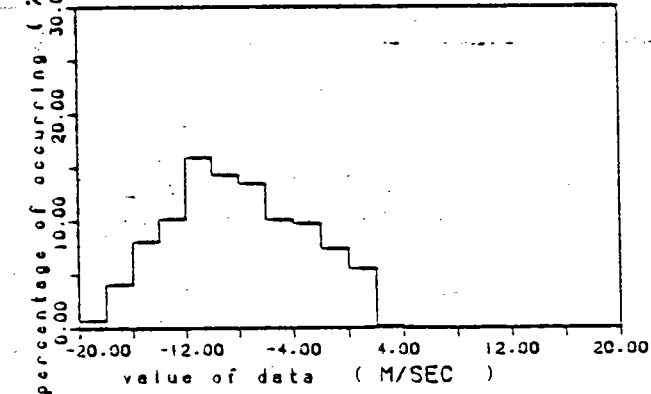
histogram of WIND E-W COMP.
 area : TAI-CHUNG HARBOUR station : YX
 duration : 86/ 1/16/15-86/ 2/25/14 total no.: 851 (960)
 mean : -5.67 abs mean : 5.77
 minimum : -13.44 maximum : 3.69
 variance : 12.17 unit : DEGREE



histogram of WIND N-S COMP.
 area : TAI-CHUNG HARBOUR station : YX
 duration : 86/ 1/16/15-86/ 2/25/14 total no.: 85
 mean : -6.05 abs mean : 5
 minimum : -16.44 maximum : 3.69
 variance : 13.82 unit : M/SEC



histogram of WIND ALONG-SHORE
 area : TAI-CHUNG HARBOUR station : YX
 duration : 86/ 1/16/15-86/ 2/25/14 total no.: 851 (960)
 mean : -8.28 abs mean : 8.38
 minimum : -18.93 maximum : 3.14
 variance : 23.88 unit : M/SEC



histogram of WIND CROSS-SHORE
 area : TAI-CHUNG HARBOUR station : YX
 duration : 86/ 1/16/15-86/ 2/25/14 total no.: 85
 mean : 0.46 abs mean : 8
 minimum : -7.52 maximum : 3.14
 variance : 2.13 unit : M/SEC

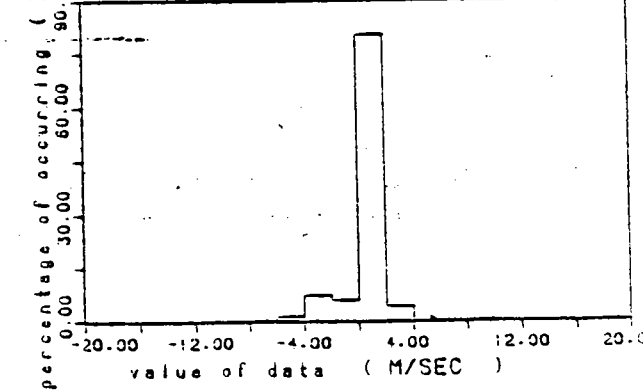
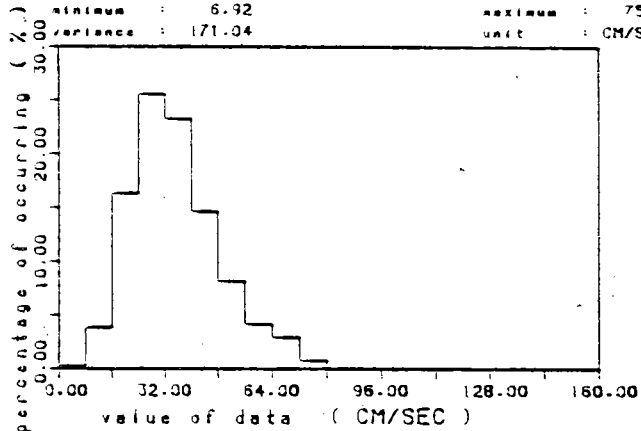
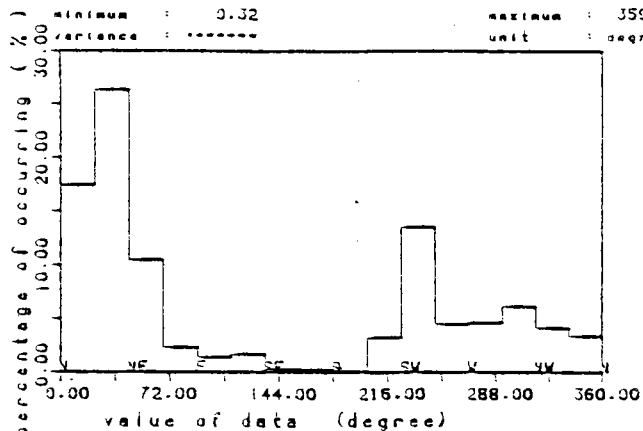


圖 II - 1 (b)

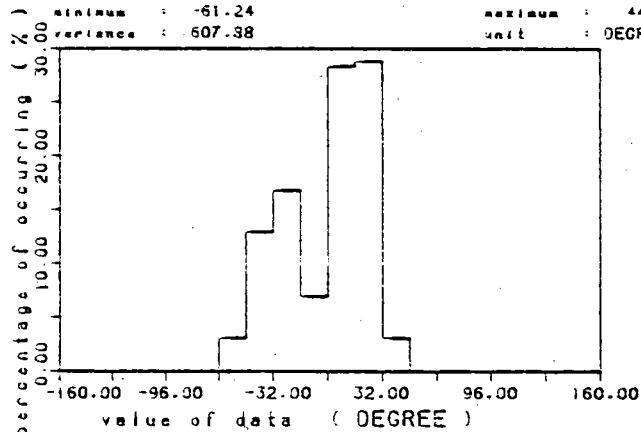
histogram of CURRENT SPEED
 area : TAI-CHUNG HAROUR station : 90-02
 duration : 86/03/07/13:~86/04/03/13 total no.: 649(649)
 mean : 35.05 sbs mean : 35.05
 minimum : 6.92 maximum : 75.86
 variance : 171.04 unit : CM/SEC



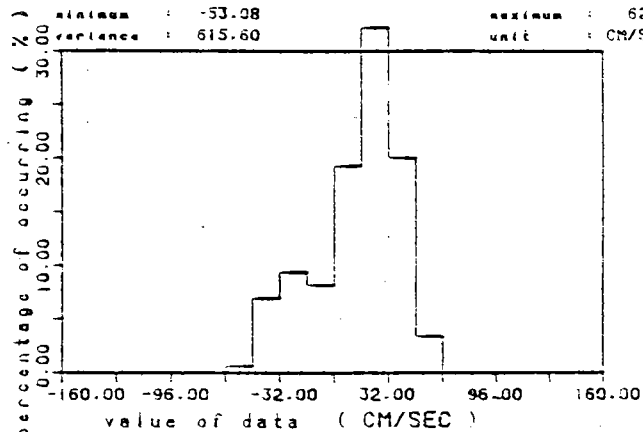
histogram of current direction (north=0 degree)
 area : TAI-CHUNG HAROUR station : 90-02
 duration : 86/03/07/13:~86/04/03/13 total no.: 649(649)
 mean : 130.88 sbs mean : 130.88
 minimum : 0.32 maximum : 359.32
 variance : 1111.11 unit : degree



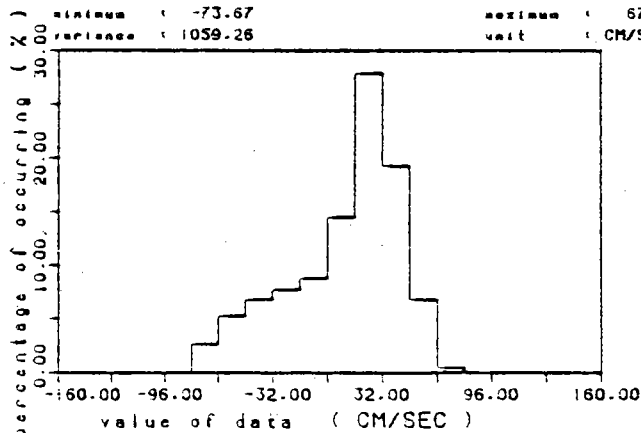
histogram of CURRENT E-W COMP.
 area : TAI-CHUNG HAROUR station : 90-02
 duration : 86/03/07/13:~86/04/03/13 total no.: 649(649)
 mean : -1.15 sbs mean : 21.50
 minimum : -61.24 maximum : 44.99
 variance : 607.38 unit : DEGREE



histogram of CURRENT N-S COMP.
 area : TAI-CHUNG HAROUR station : 90-02
 duration : 86/03/07/13:~86/04/03/13 total no.: 649(649)
 mean : 13.22 sbs mean : 24.33
 minimum : -53.08 maximum : 62.80
 variance : 615.60 unit : CM/SEC



histogram of CURRENT ALONG-SHORE
 area : TAI-CHUNG HAROUR station : 90-02
 duration : 86/03/07/13:~86/04/03/13 total no.: 649(649)
 mean : 9.39 sbs mean : 29.48
 minimum : -73.67 maximum : 67.26
 variance : 1059.26 unit : CM/SEC



histogram of CURRENT CROSS-SHORE
 area : TAI-CHUNG HAROUR station : 90-02
 duration : 86/03/07/13:~86/04/03/13 total no.: 649(649)
 mean : 9.38 sbs mean : 12.91
 minimum : -27.31 maximum : 42.17
 variance : 164.25 unit : CM/SEC

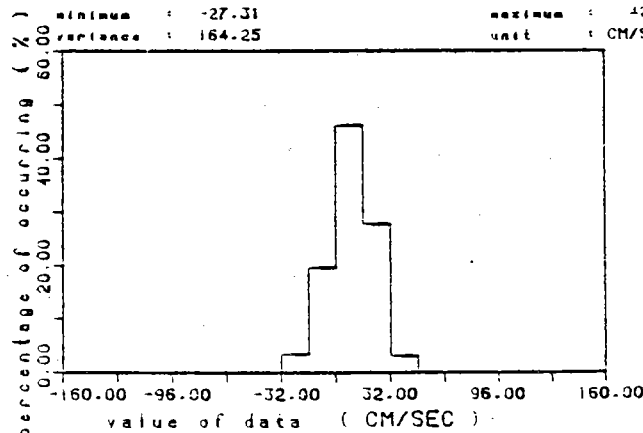
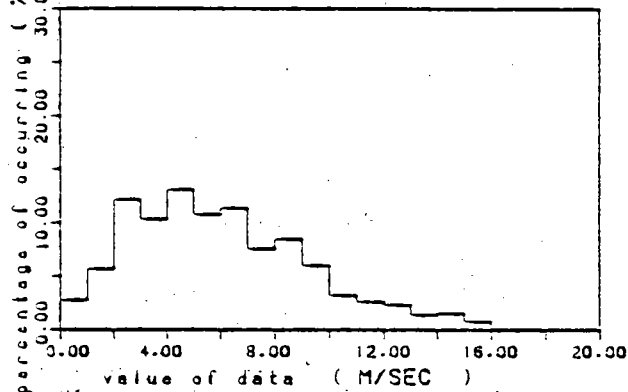
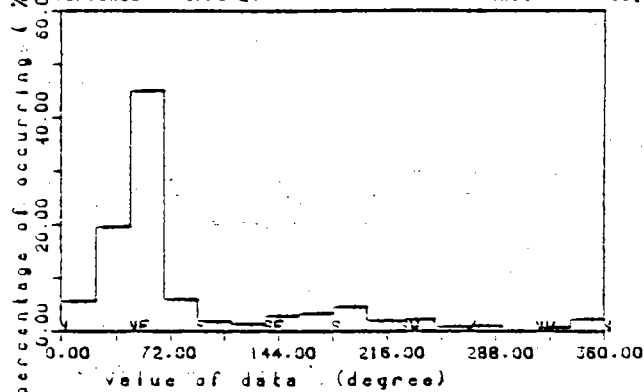


圖 II - 2 (a)

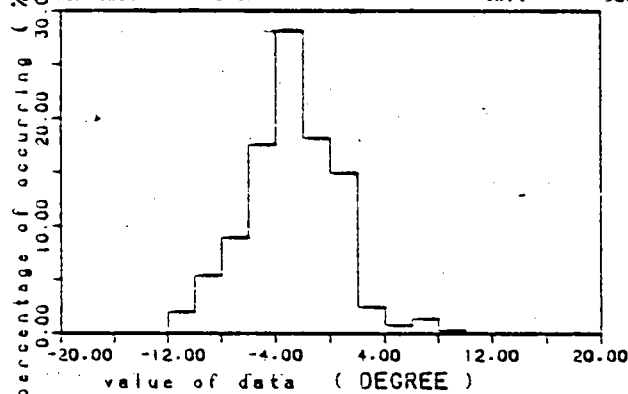
histogram of WIND SPEED
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 7/13:-86/ 4/ 3/14 total no.: 650 (650)
 mean : 5.87 obs mean : 5.87
 minimum : 0.10 maximum : 15.60
 variance : 11.08 unit : M/SEC



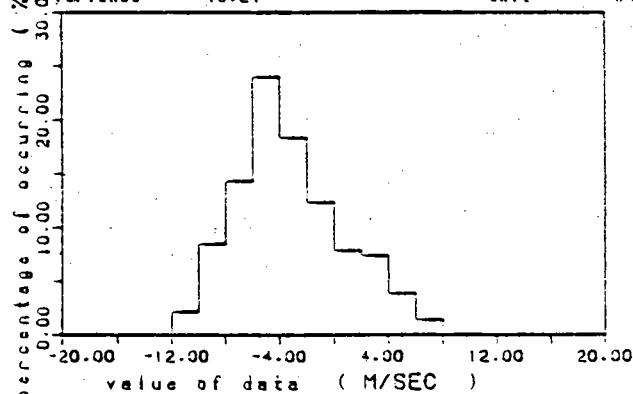
histogram of wind direction (north=0 degree)
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 7/13:-86/ 4/ 3/14 total no.: 650 (650)
 mean : 74.63 obs mean : 74.63
 minimum : 0.00 maximum : 337.00
 variance : 5770.24 unit : degree



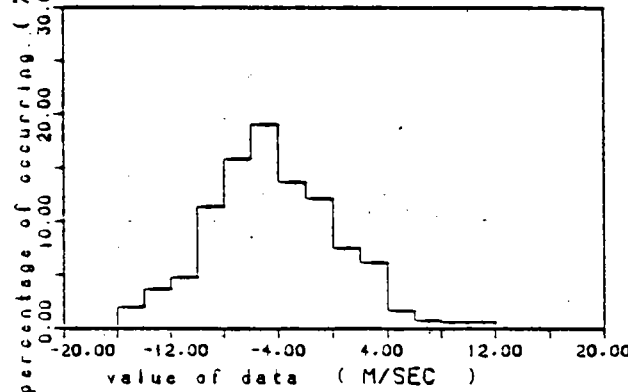
histogram of WIND E-W COMP.
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 7/13:-86/ 4/ 3/14 total no.: 650 (650)
 mean : -2.94 obs mean : 3.51
 minimum : -11.03 maximum : 8.87
 variance : 10.67 unit : DEGREE



histogram of WIND N-S COMP.
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 7/13:-86/ 4/ 3/14 total no.: 650 (650)
 mean : -3.31 obs mean : 4.00
 minimum : -11.03 maximum : 7.00
 variance : 15.24 unit : M/SEC



histogram of WIND ALONG-SHORE
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 7/13:-86/ 4/ 3/14 total no.: 650 (650)
 mean : -4.43 obs mean : 5.44
 minimum : -15.54 maximum : 10.86
 variance : 22.75 unit : M/SEC



histogram of WIND CROSS-SHORE
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 7/13:-86/ 4/ 3/14 total no.: 650 (650)
 mean : 0.12 obs mean : 1.00
 minimum : -7.54 maximum : 5.00
 variance : 3.16 unit : M/SEC

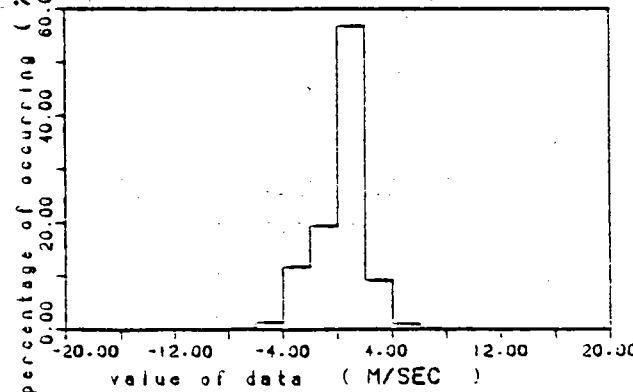
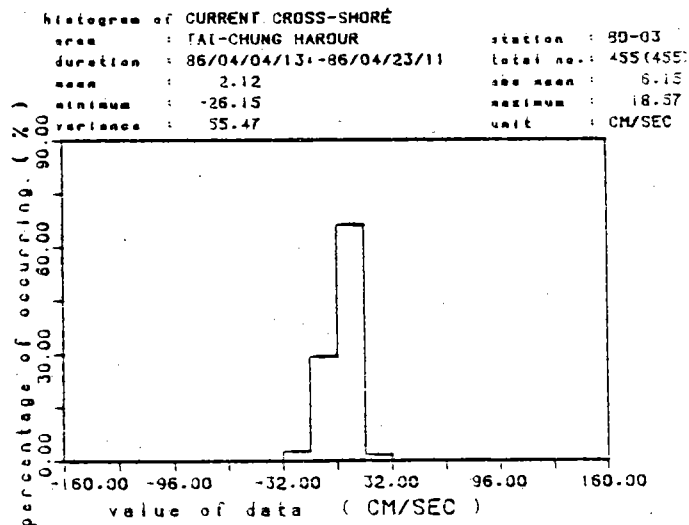
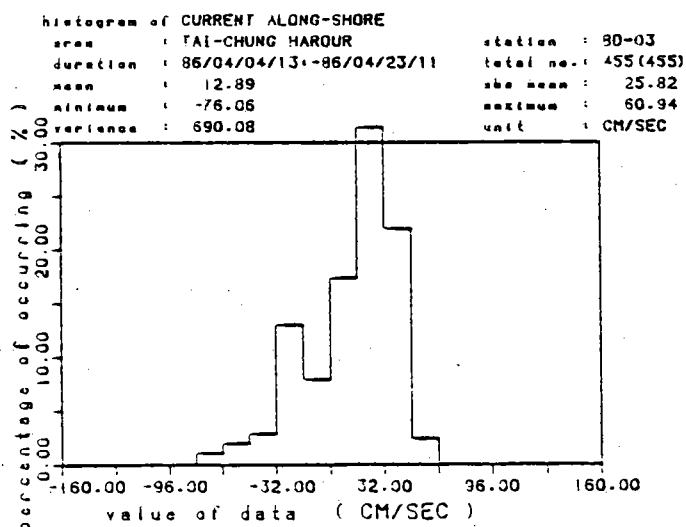
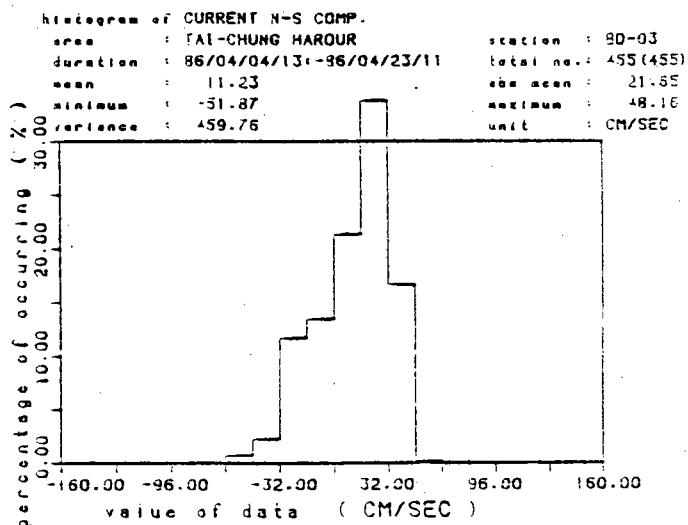
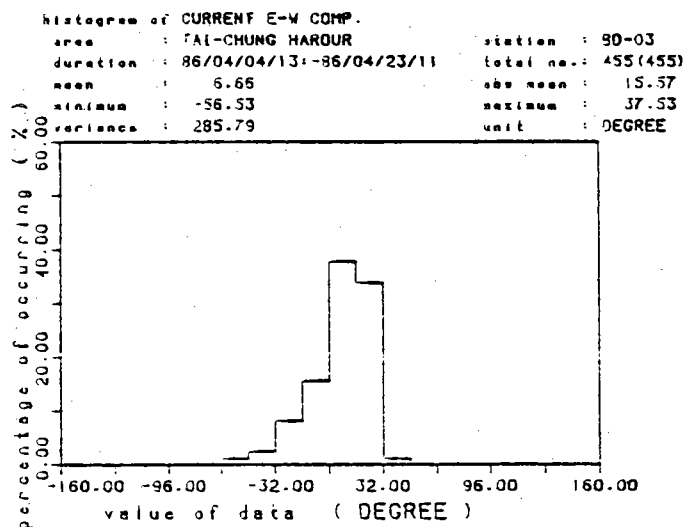
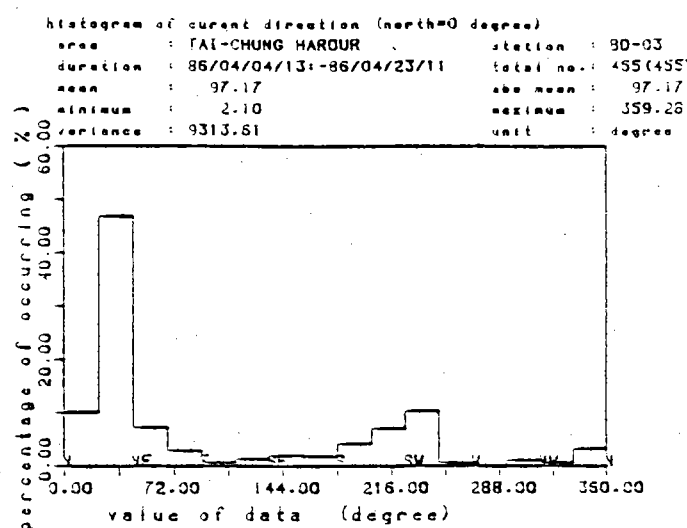
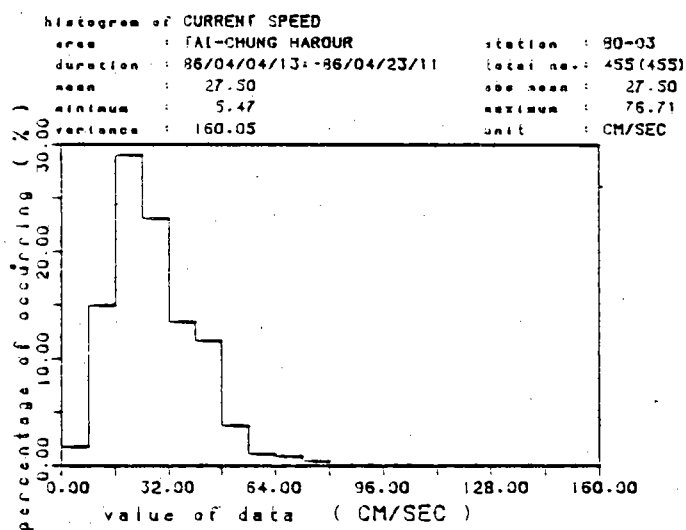


圖 II - 2 (b)



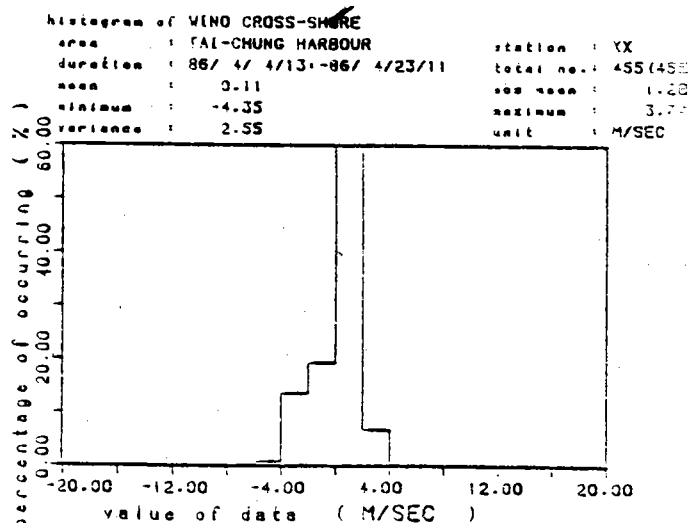
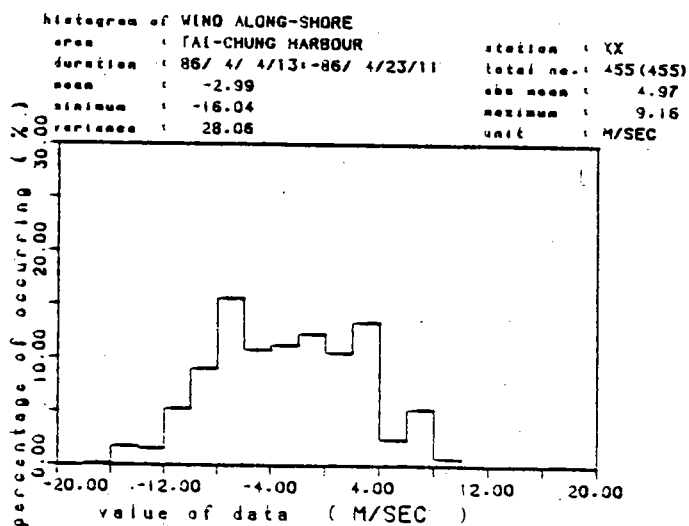
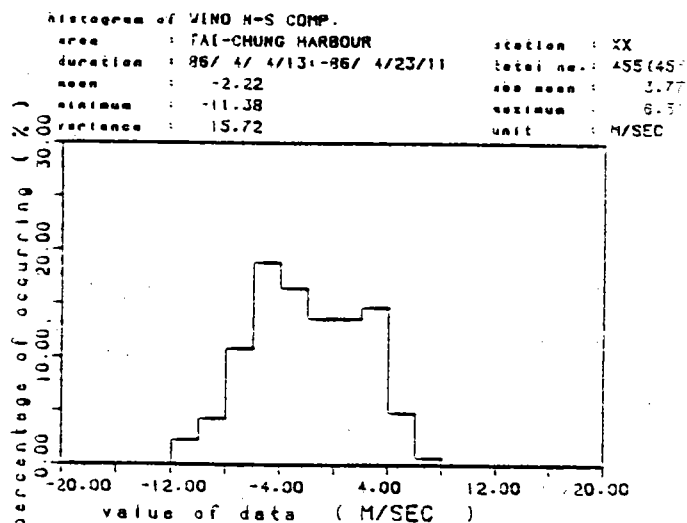
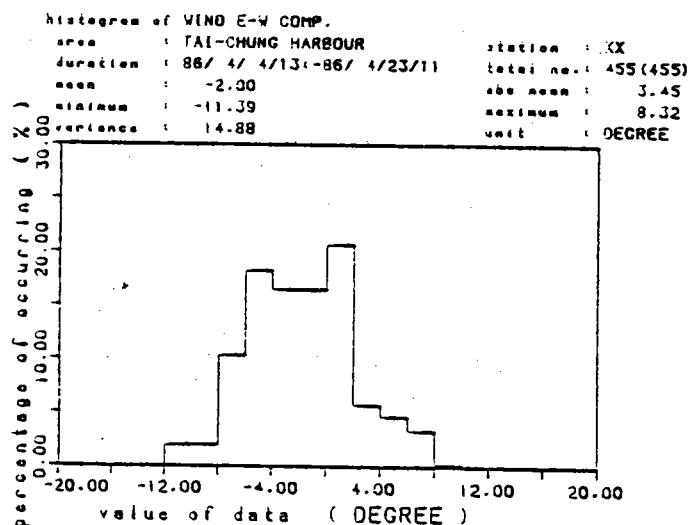
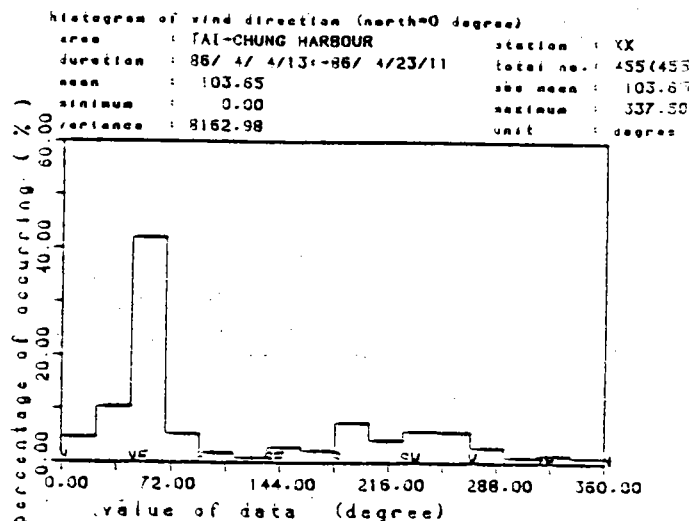
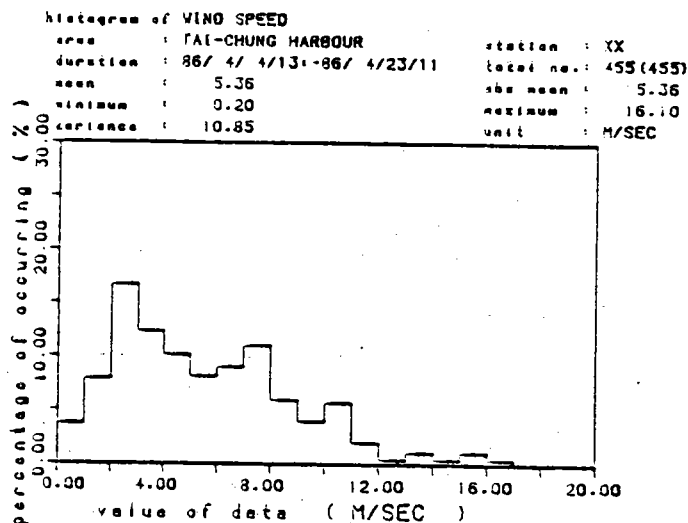


圖 II - 3 (b)

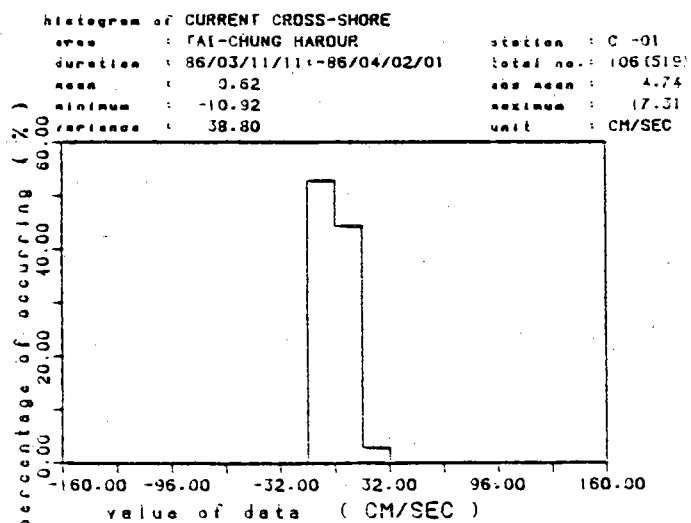
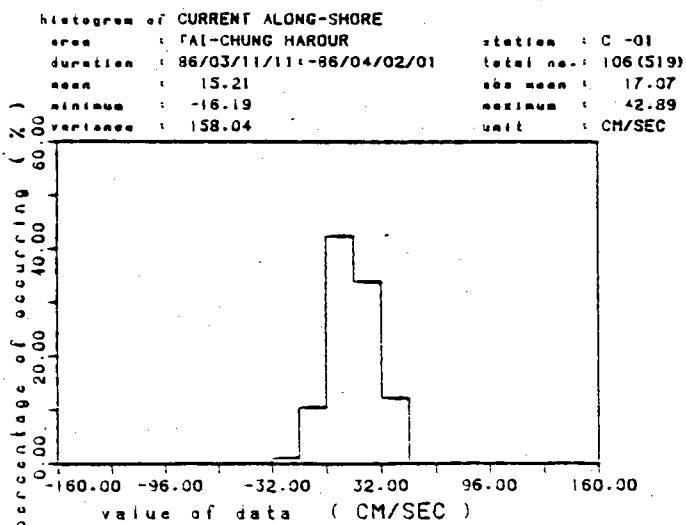
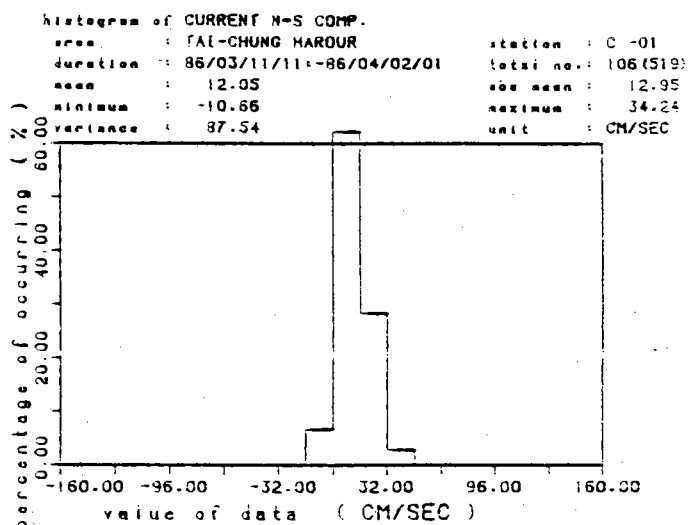
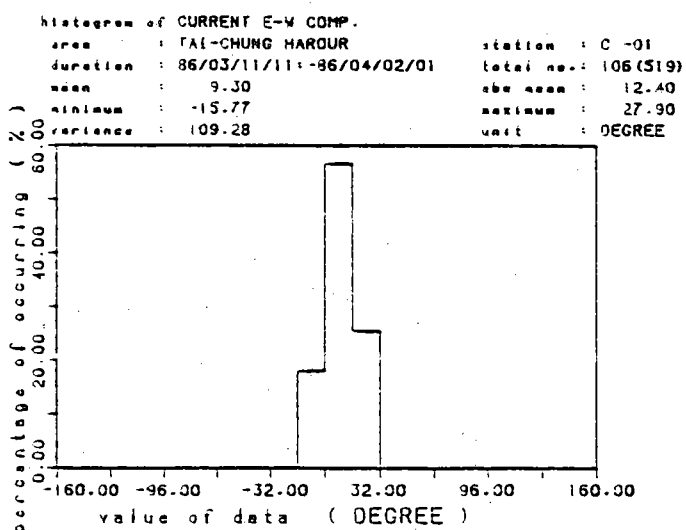
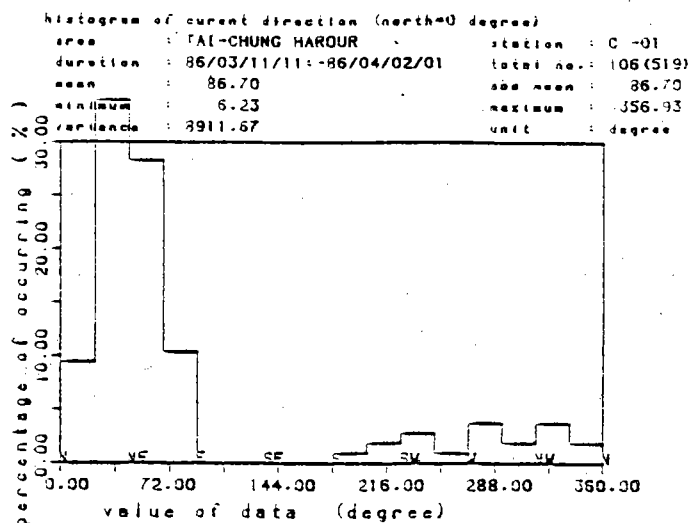
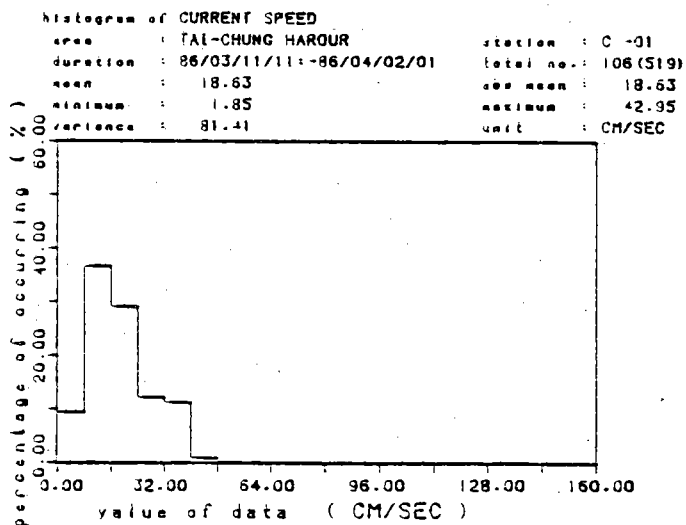
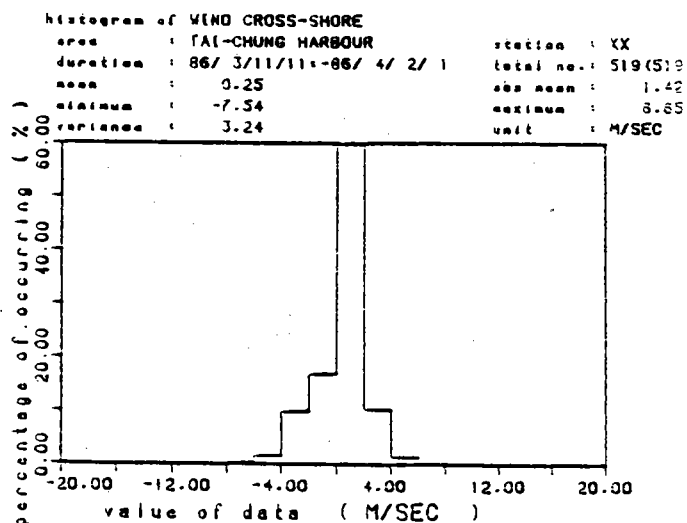
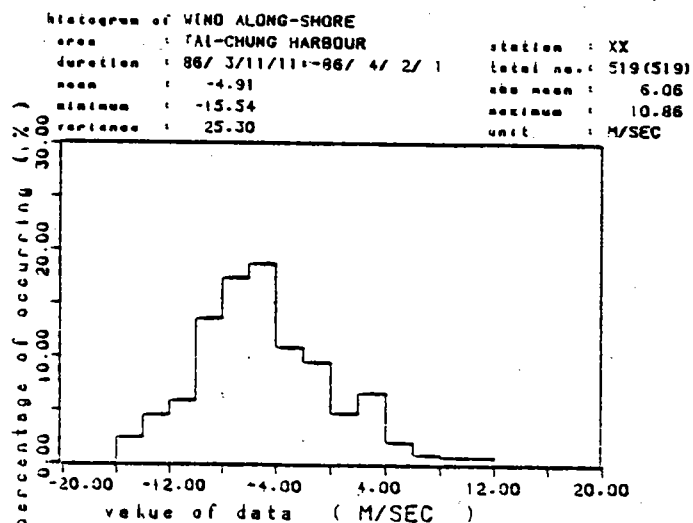
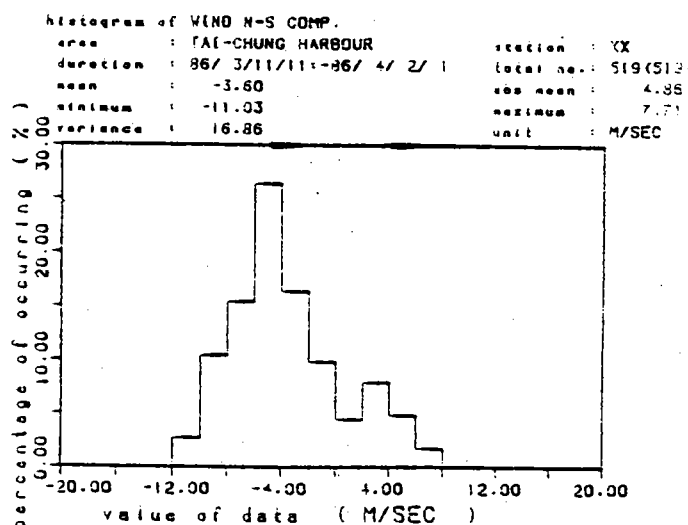
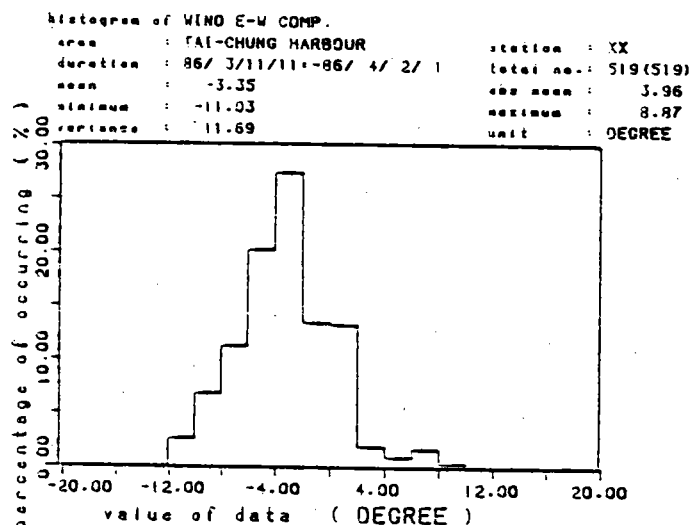
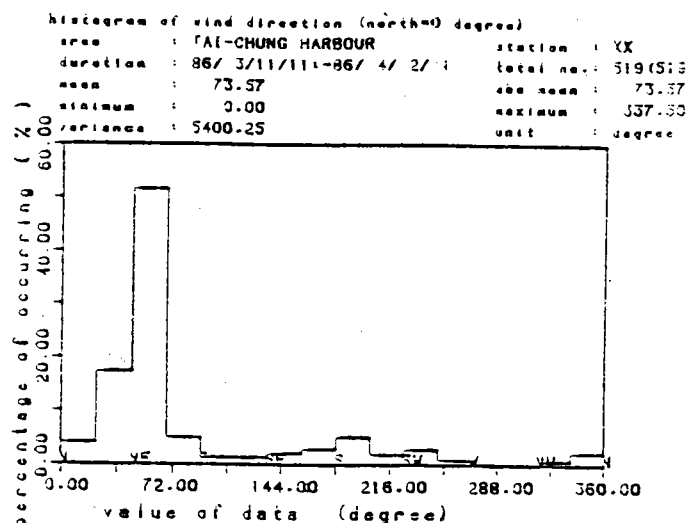
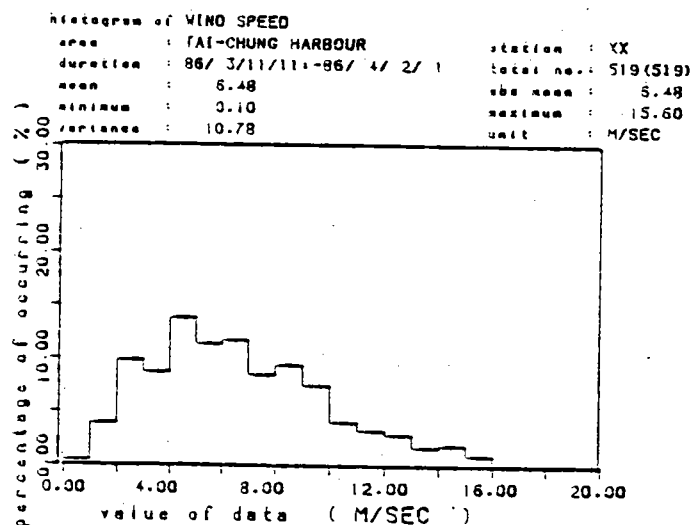


圖 II - 4 (a)



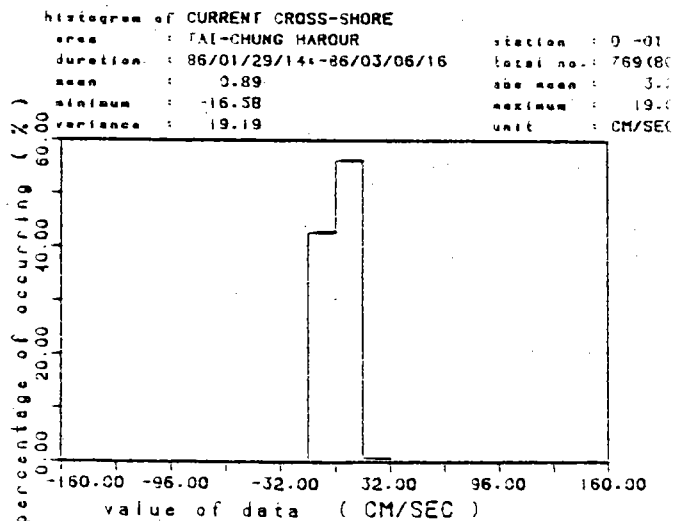
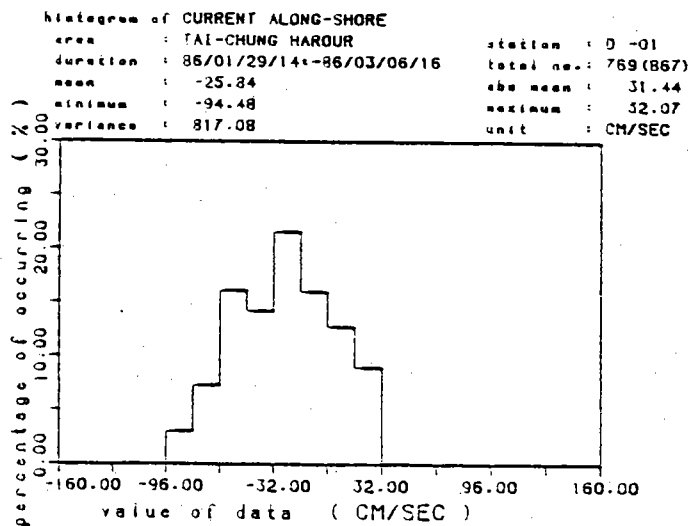
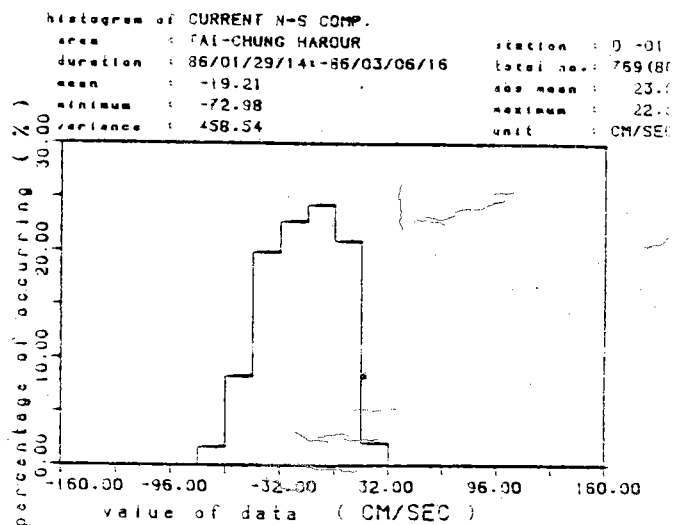
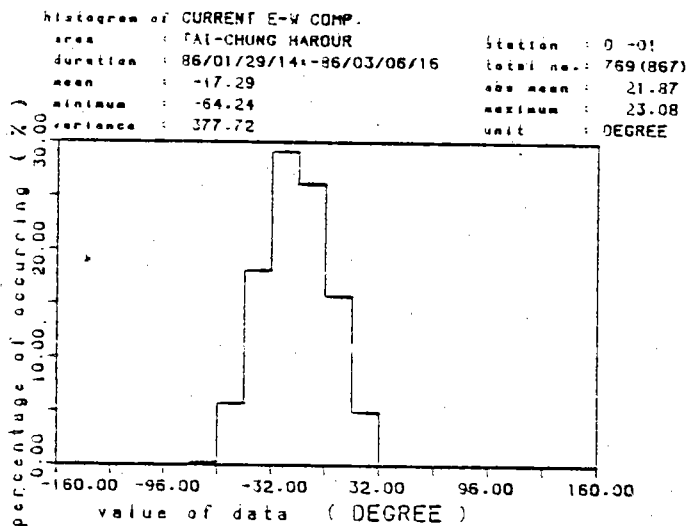
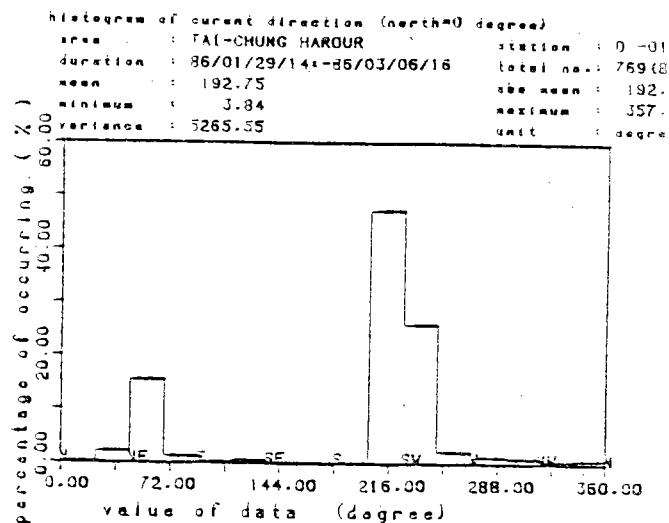
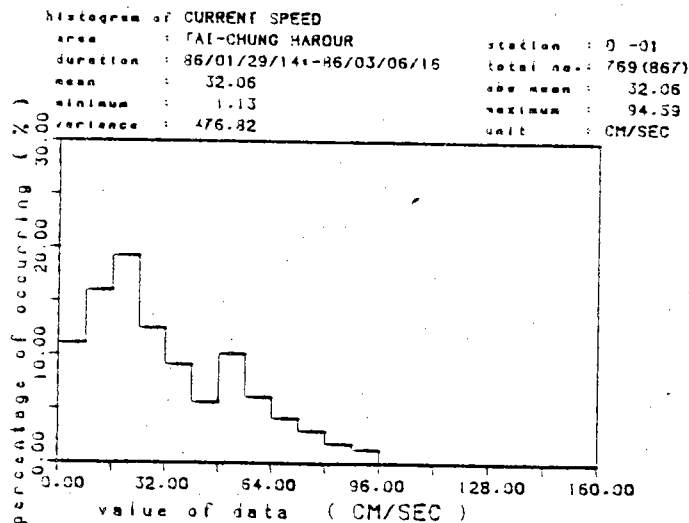


圖 II - 5 (a)

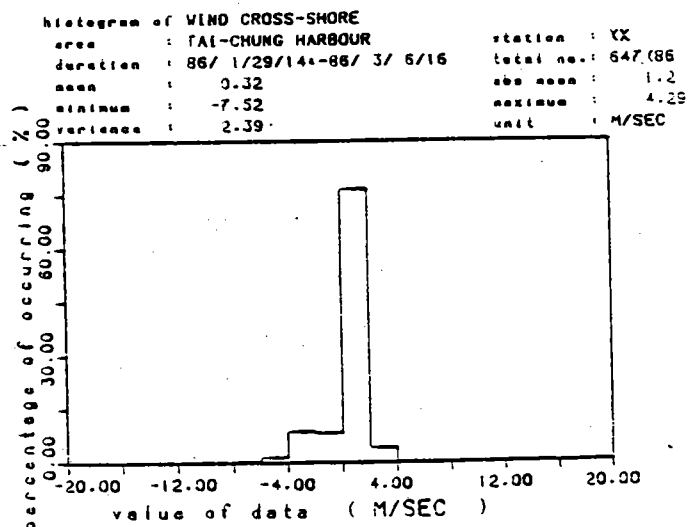
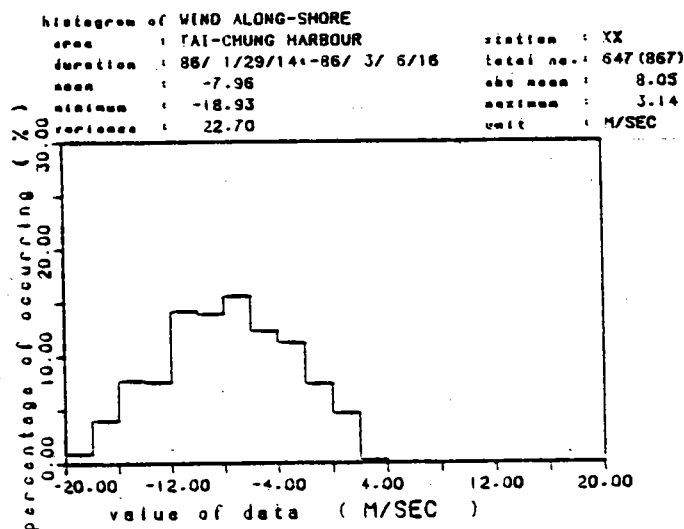
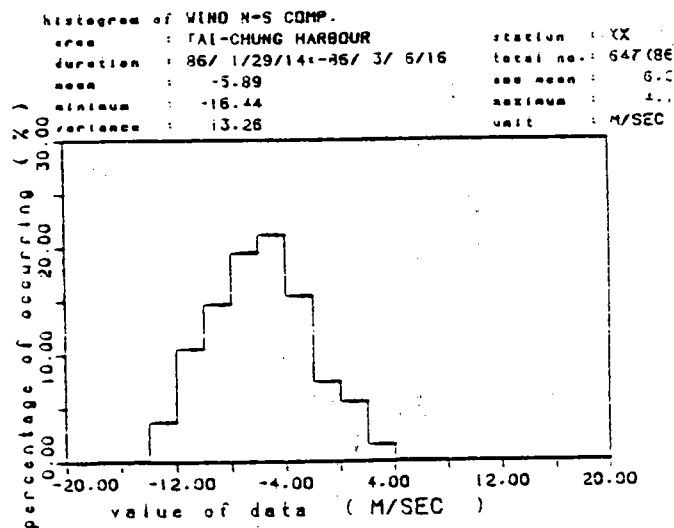
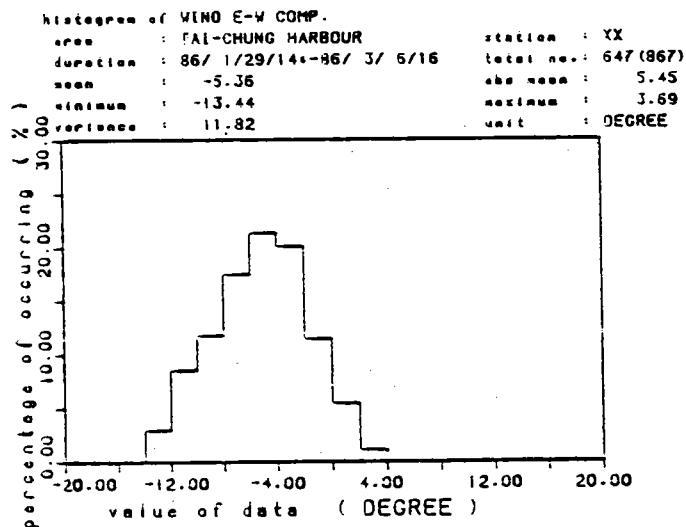
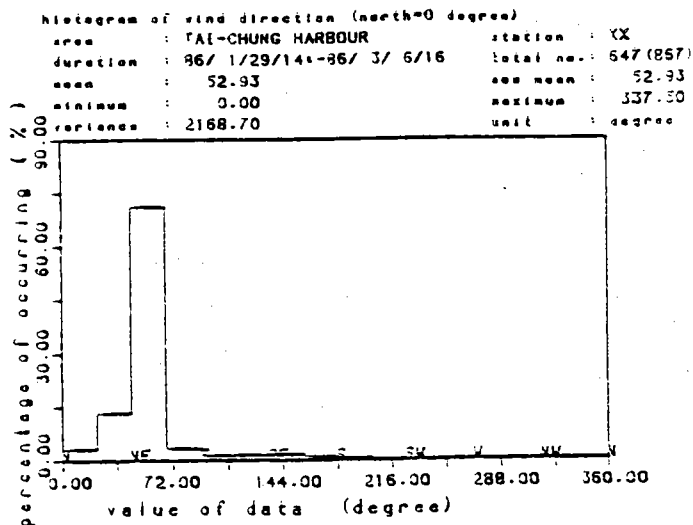
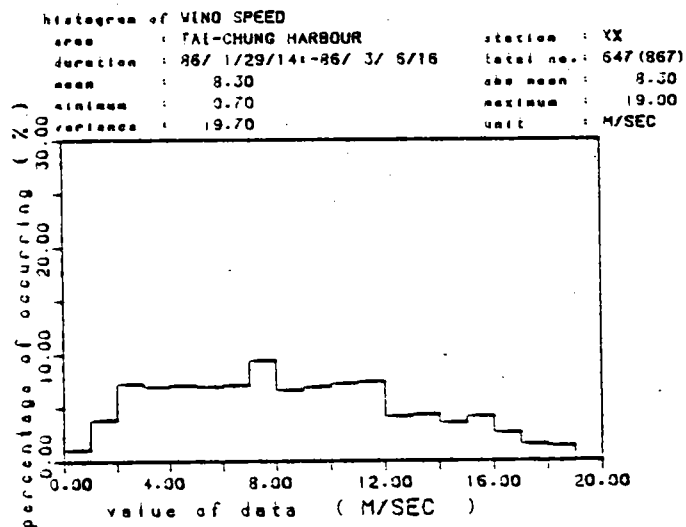


圖 II - 5 (b)

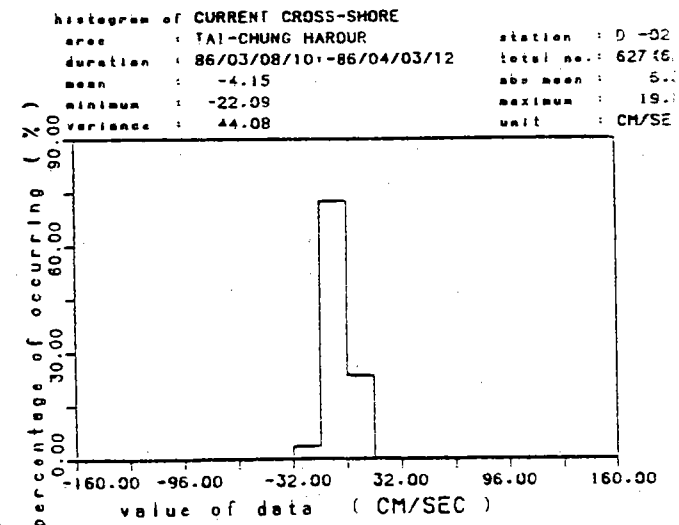
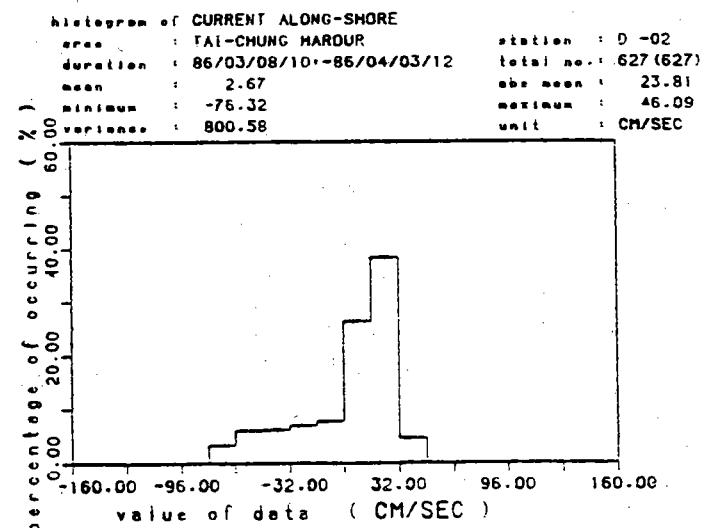
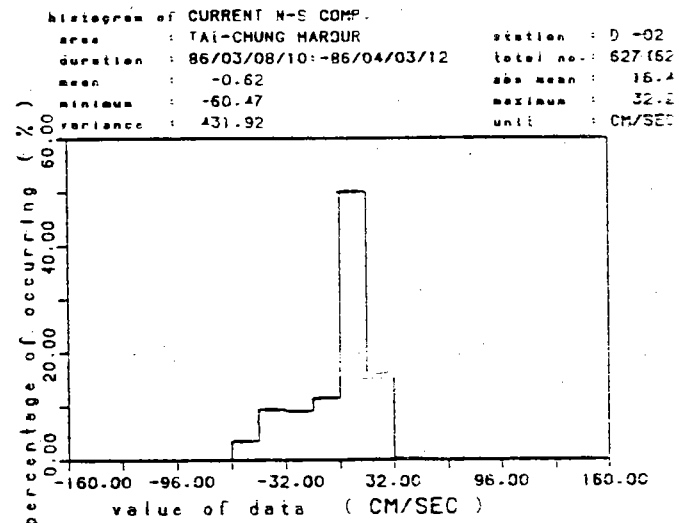
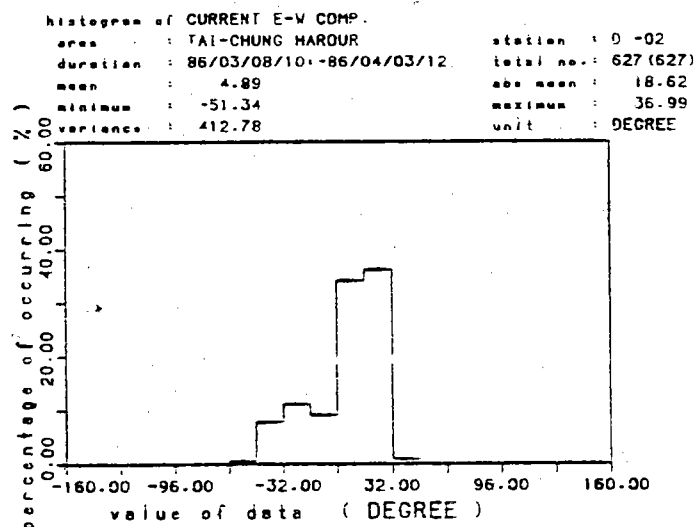
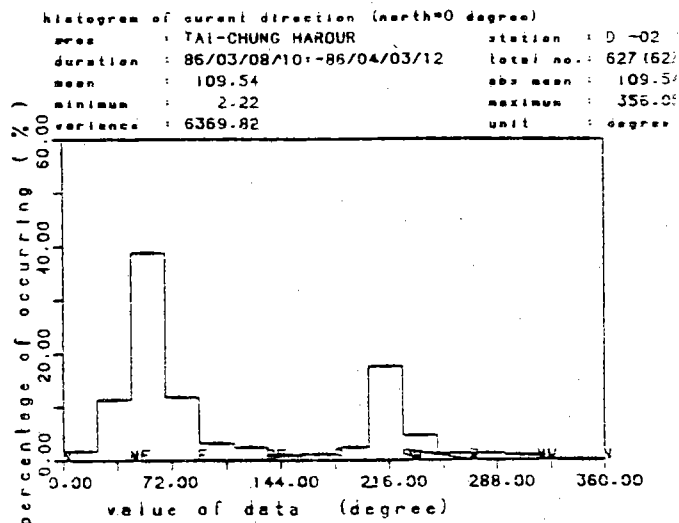
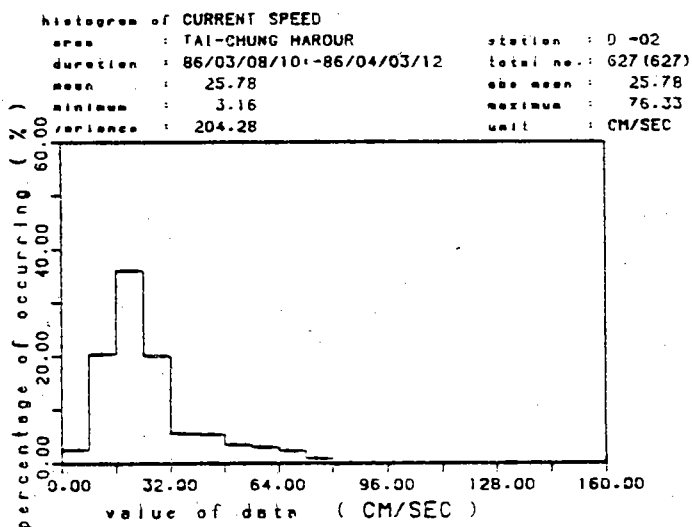
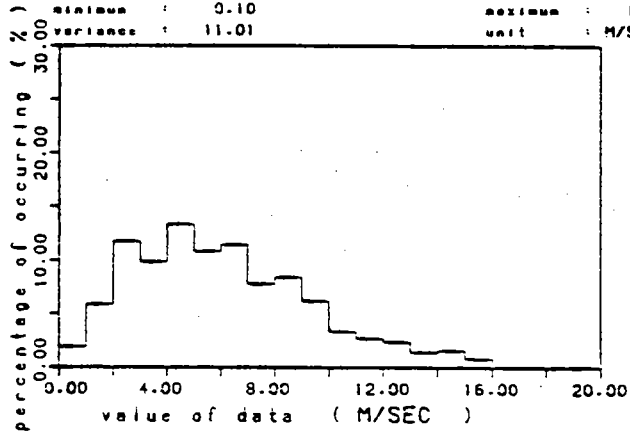
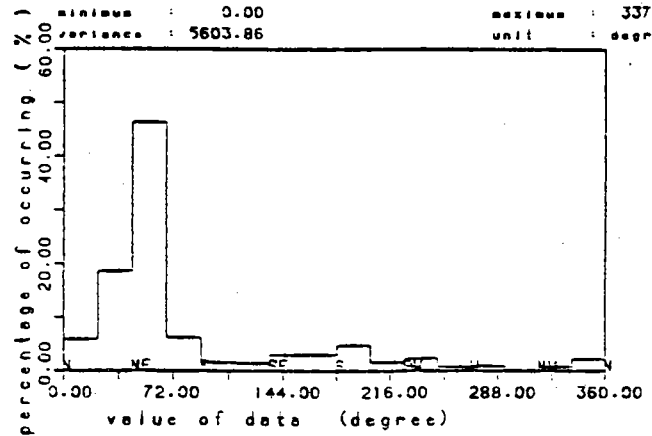


圖 II - 6 (a)

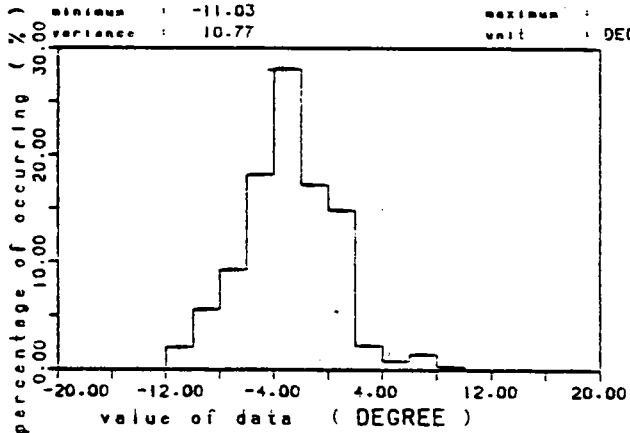
histogram of WIND SPEED
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 8/10:-86/ 4/ 3/12 total no.: 627 (627)
 mean : 5.96 obs mean : 5.96
 minimum : 0.10 maximum : 15.60
 variance : 11.01 unit : M/SEC



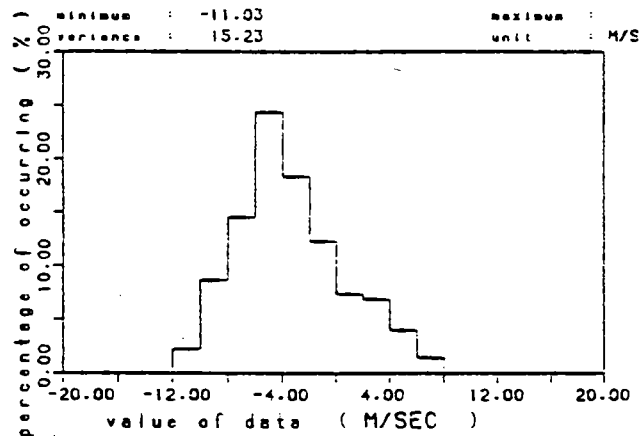
histogram of wind direction (north=0 degree)
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 8/10:-86/ 4/ 3/12 total no.: 627 (627)
 mean : 73.49 obs mean : 73.49
 minimum : 0.00 maximum : 337.50
 variance : 5603.86 unit : degree



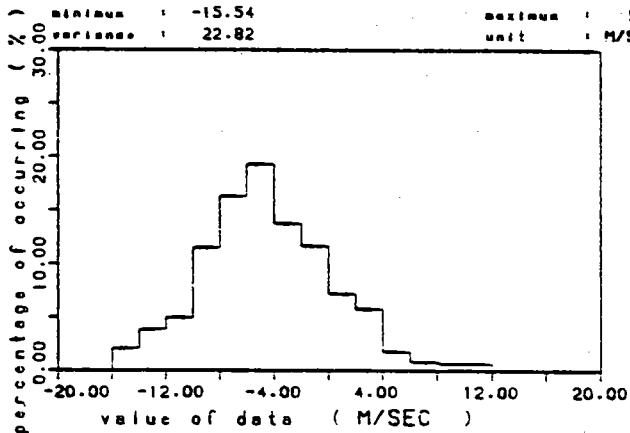
histogram of WIND E-W COMP.
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 8/10:-86/ 4/ 3/12 total no.: 627 (627)
 mean : -3.02 obs mean : 3.59
 minimum : -11.03 maximum : 8.87
 variance : 10.77 unit : DEGREE



histogram of WIND N-S COMP.
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 8/10:-86/ 4/ 3/12 total no.: 627 (627)
 mean : -3.38 obs mean : 4.42
 minimum : -11.03 maximum : 7.77
 variance : 15.23 unit : M/SEC



histogram of WIND ALONG-SHORE
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 8/10:-86/ 4/ 3/12 total no.: 627 (627)
 mean : -4.53 obs mean : 5.53
 minimum : -15.54 maximum : 10.86
 variance : 22.82 unit : M/SEC



histogram of WIND CROSS-SHORE
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 3/ 8/10:-86/ 4/ 3/12 total no.: 627 (627)
 mean : 0.15 obs mean : 1.4
 minimum : -7.54 maximum : 6.6
 variance : 3.17 unit : M/SEC

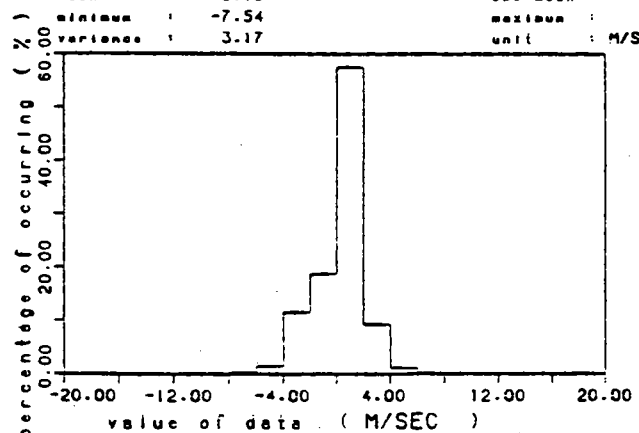
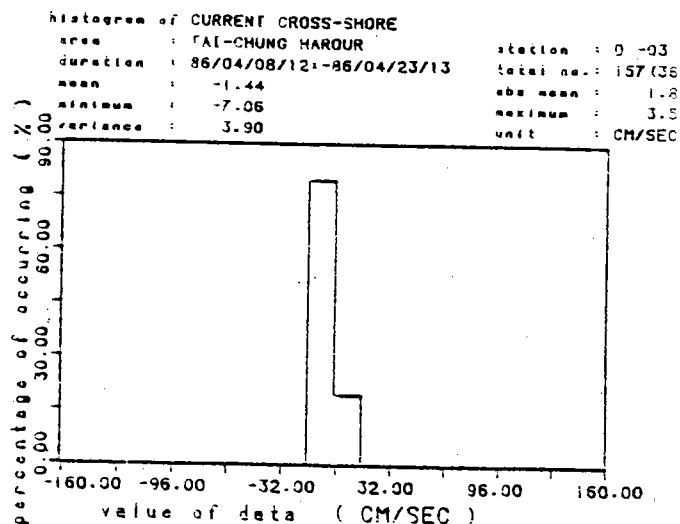
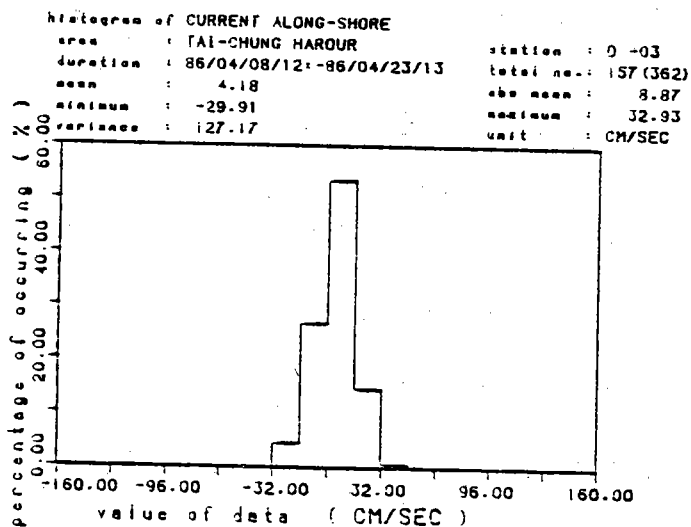
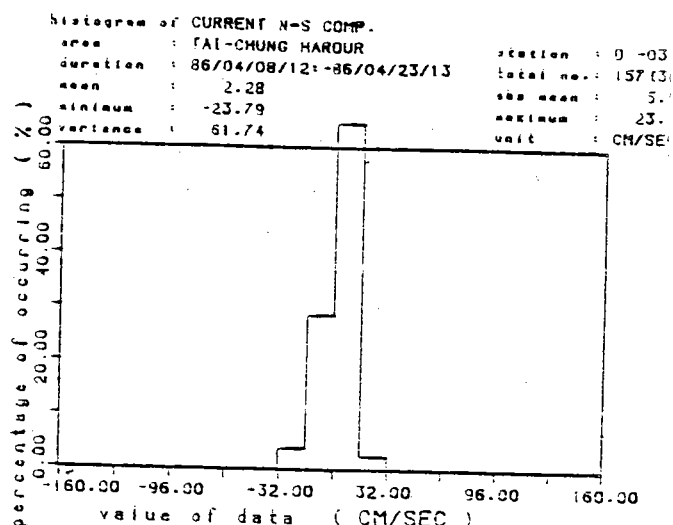
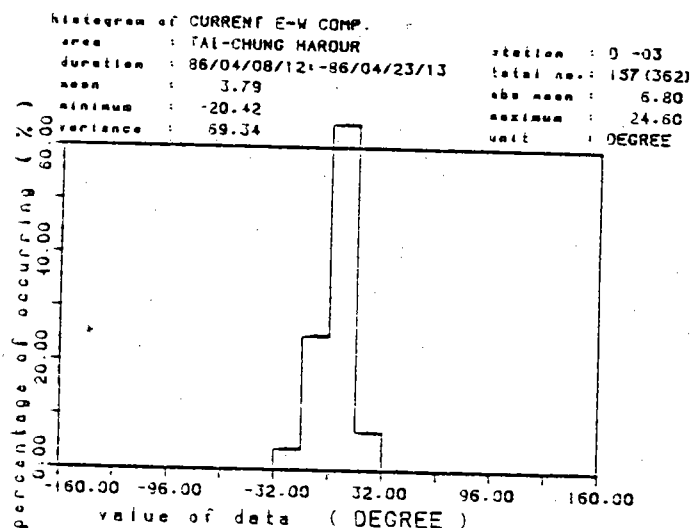
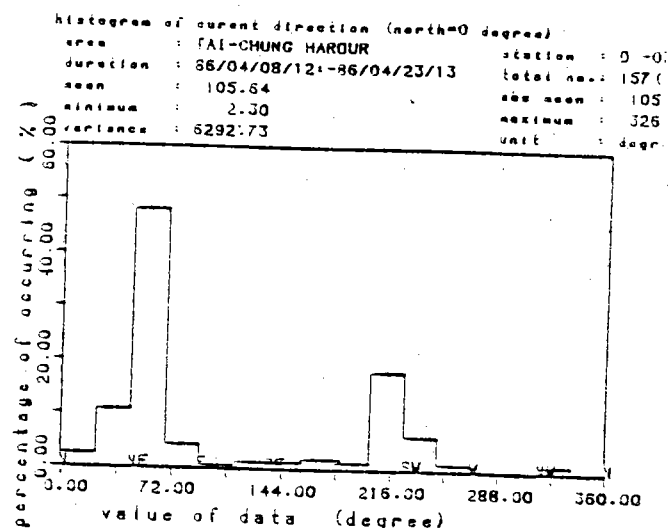
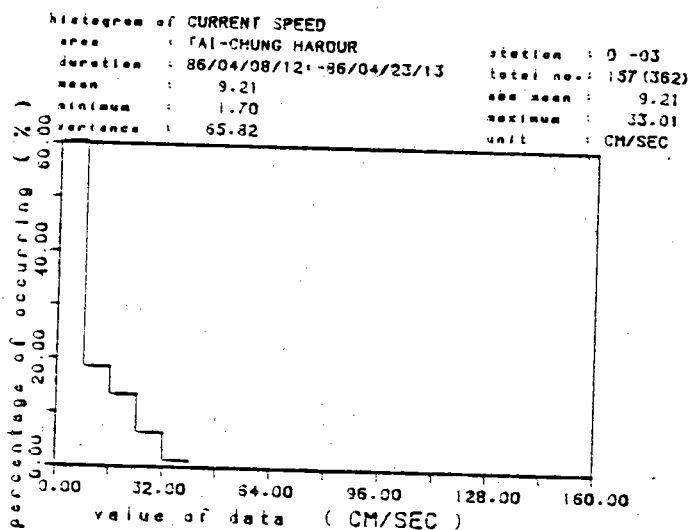
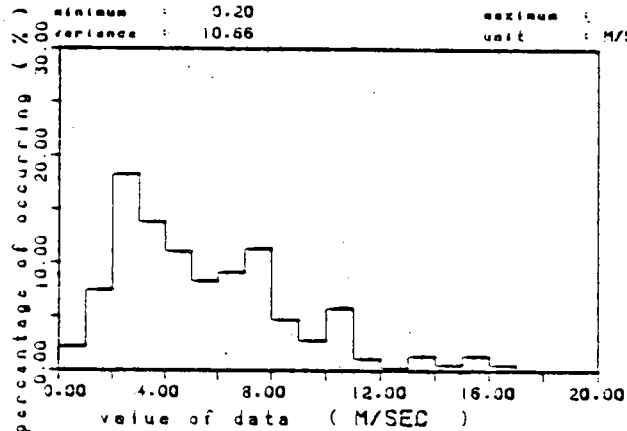


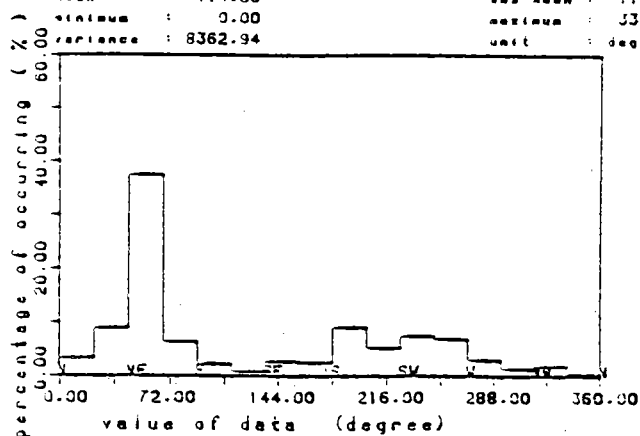
圖 II - 6 (b)



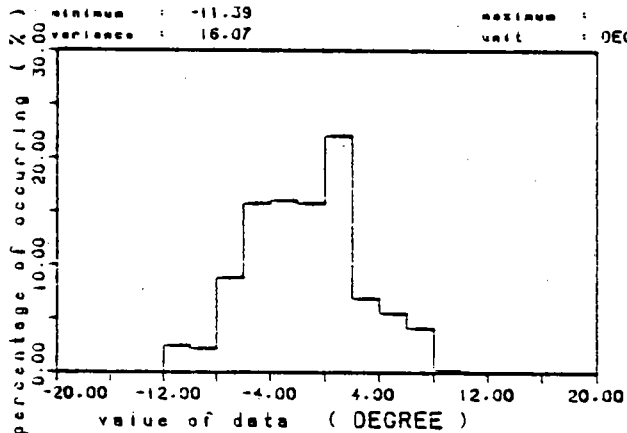
histogram of WIND SPEED
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 4/ 8/12:-86/ 4/23/13 total no.: 362(362)
 mean : 5.30 abs mean : 5.30
 minimum : 0.20 maximum : 16.10
 variance : 10.66 unit : M/SEC



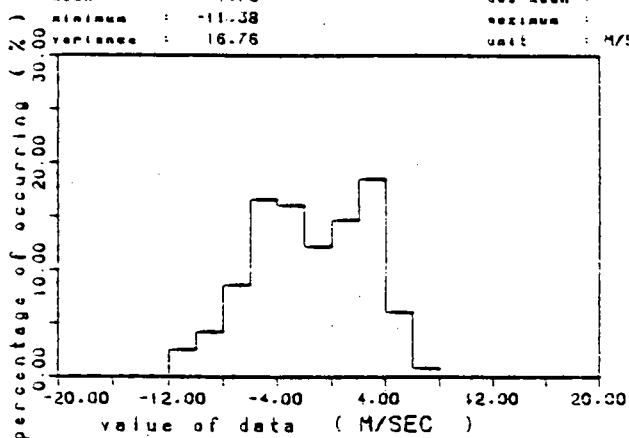
histogram of wind direction (north=0 degree)
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 4/ 8/12:-86/ 4/23/13 total no.: 362(362)
 mean : 114.86 abs mean : 114.86
 minimum : 0.00 maximum : 337.30
 variance : 8362.94 unit : degree



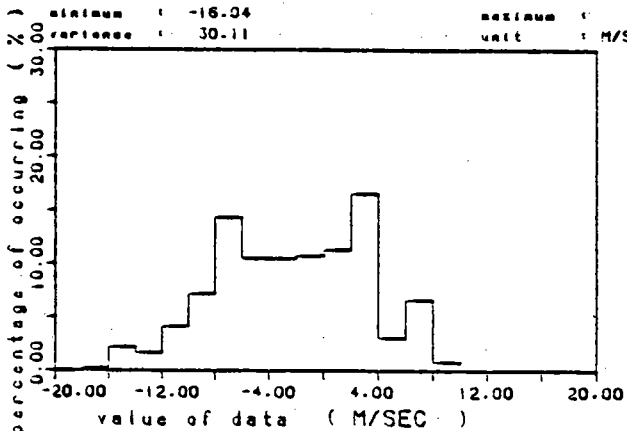
histogram of WIND E-W COMP.
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 4/ 8/12:-86/ 4/23/13 total no.: 362(362)
 mean : -1.68 abs mean : 3.43
 minimum : -11.39 maximum : 8.32
 variance : 16.07 unit : DEGREE



histogram of WIND N-S COMP.
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 4/ 8/12:-86/ 4/23/13 total no.: 362(362)
 mean : -1.76 abs mean : 3.68
 minimum : -11.38 maximum : 6.51
 variance : 16.76 unit : M/SEC



histogram of WIND ALONG-SHORE
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 4/ 8/12:-86/ 4/23/13 total no.: 362(362)
 mean : -2.43 abs mean : 4.88
 minimum : -16.04 maximum : 9.16
 variance : 30.11 unit : M/SEC



histogram of WIND CROSS-SHORE
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86/ 4/ 8/12:-86/ 4/23/13 total no.: 362(362)
 mean : 0.16 abs mean : 1.30
 minimum : -4.17 maximum : 3.70
 variance : 2.72 unit : M/SEC

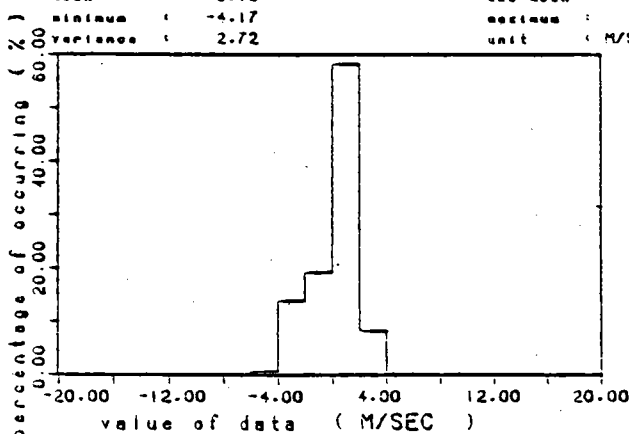


圖 II - 7 (b)

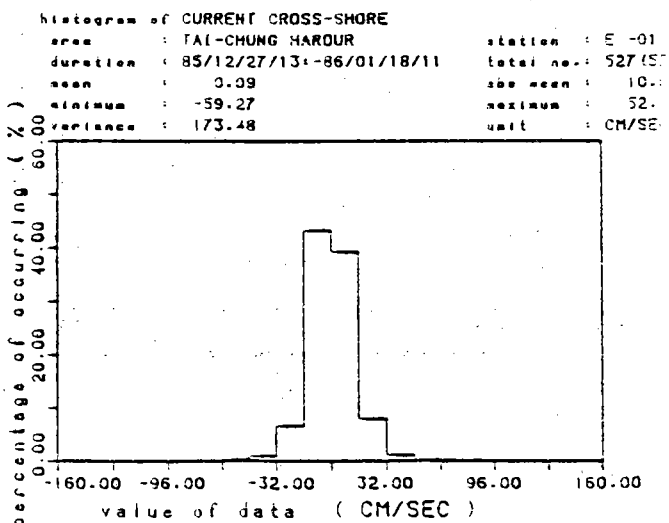
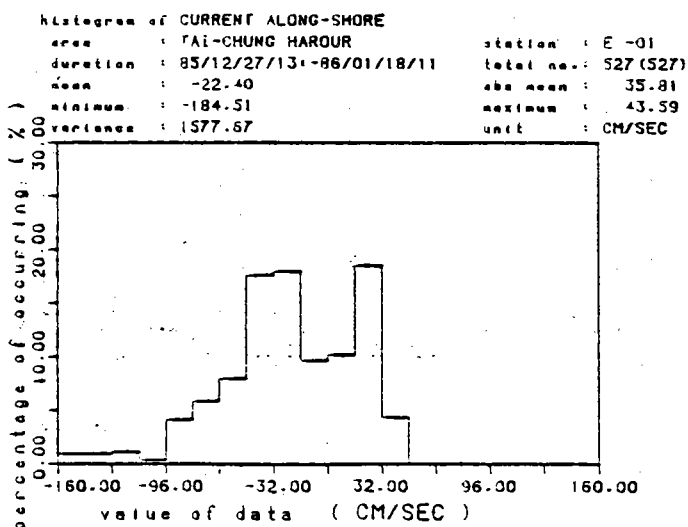
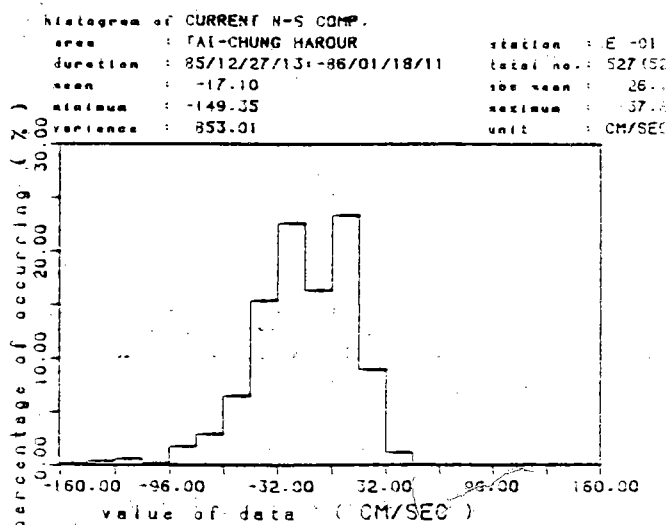
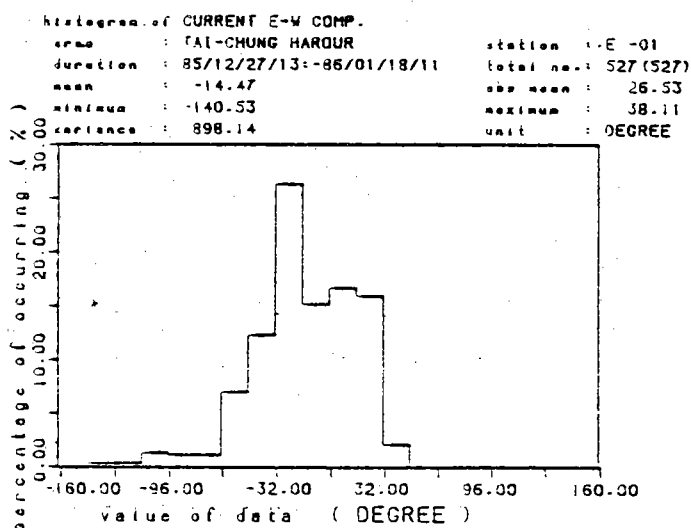
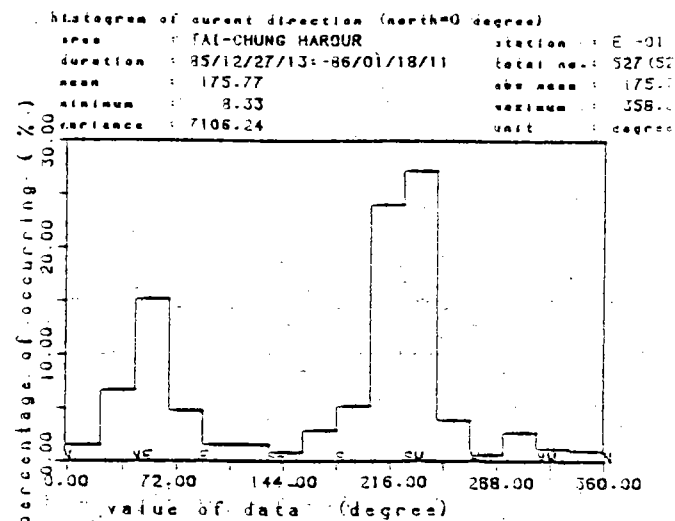
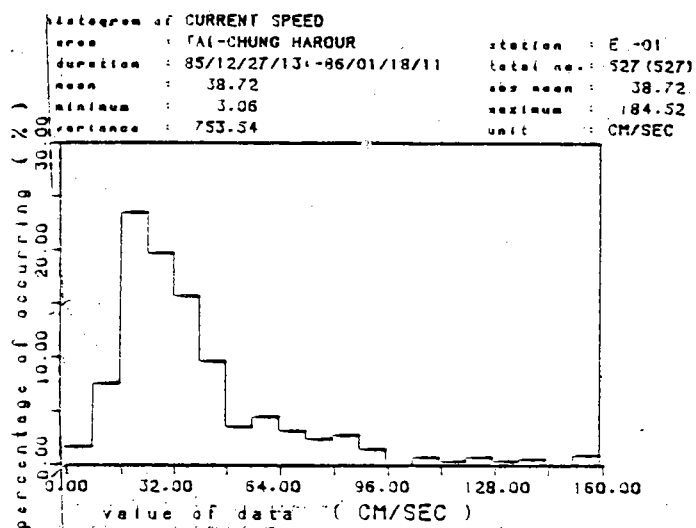


圖 II - 8 (a)

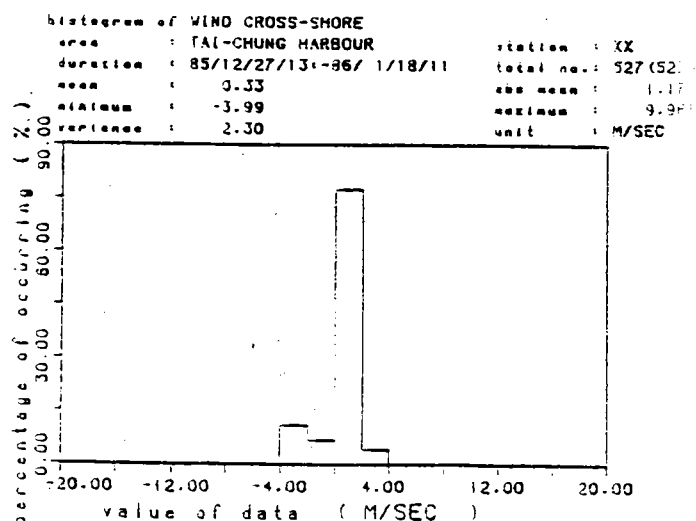
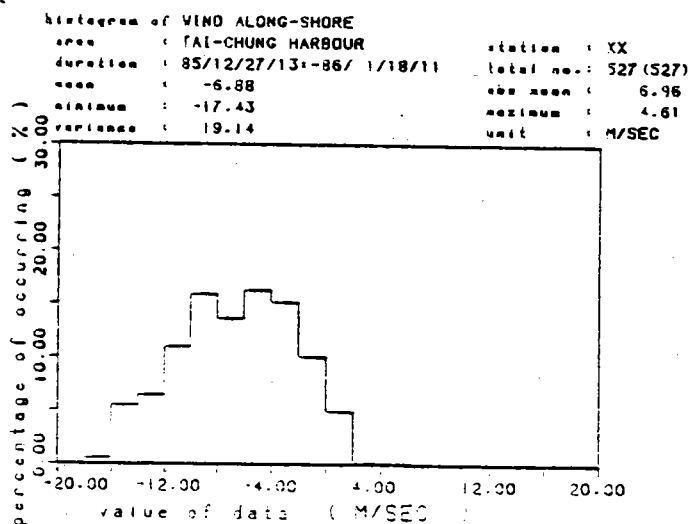
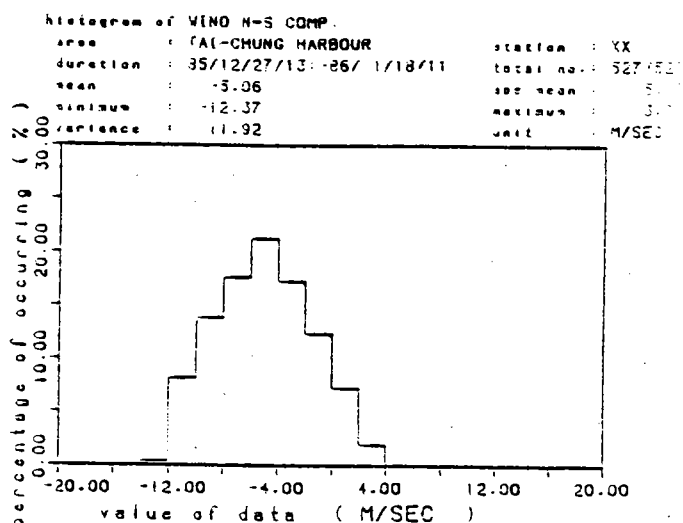
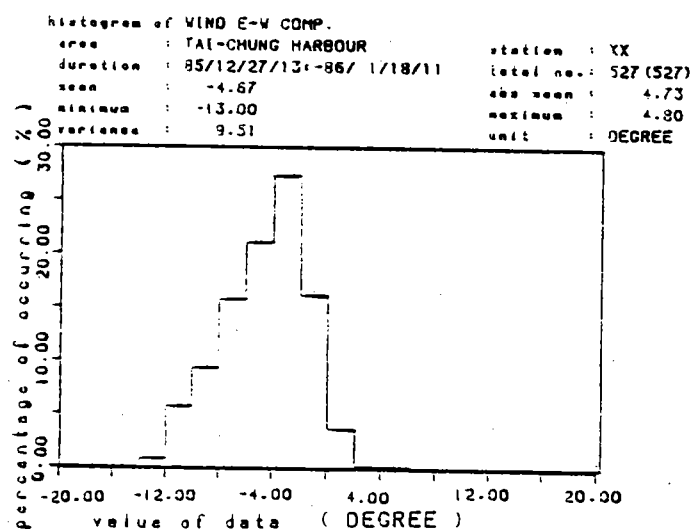
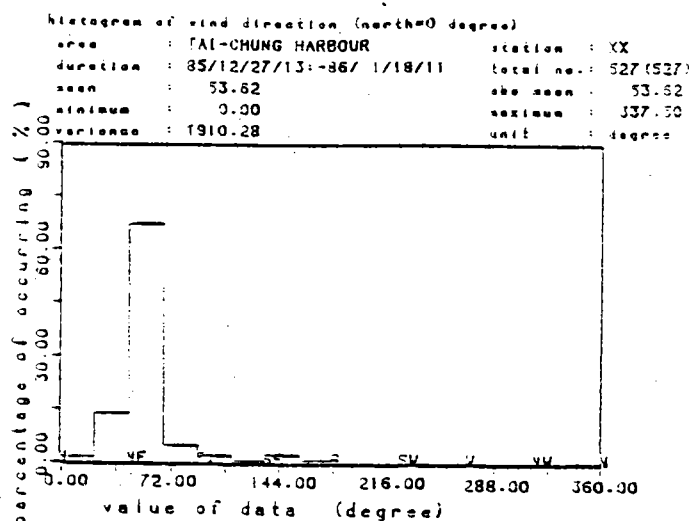
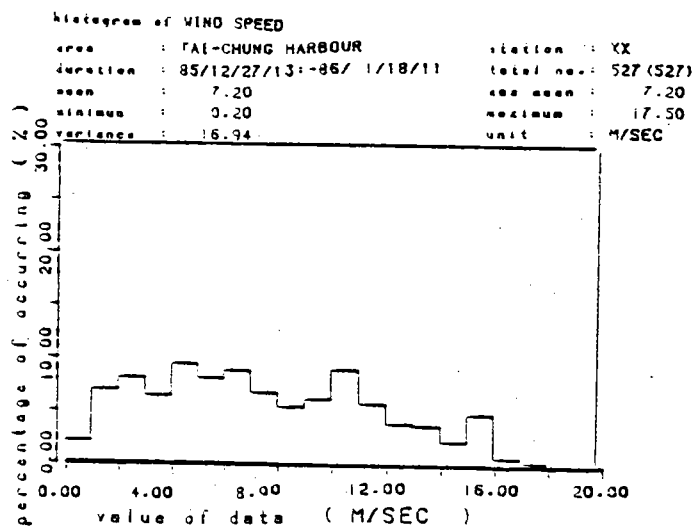


圖 II - 8 (b)

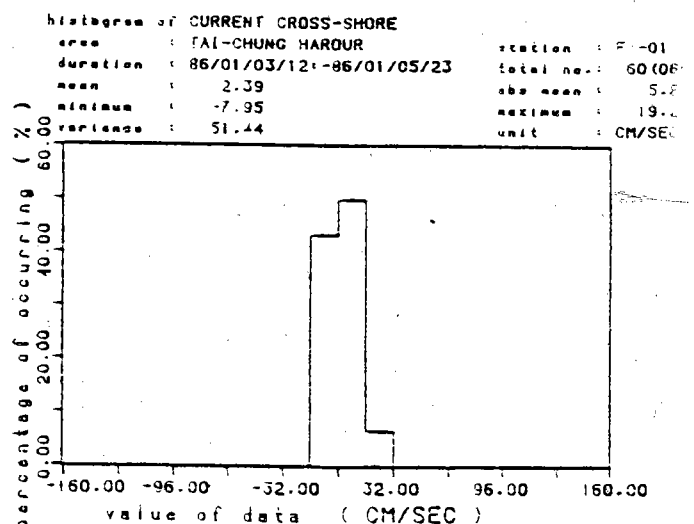
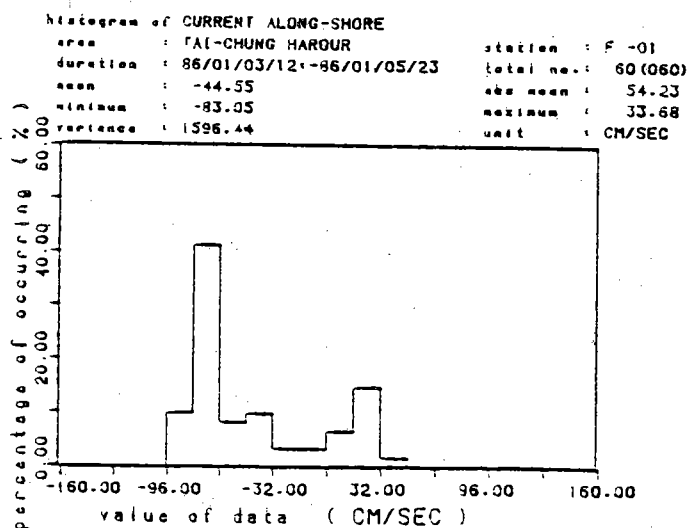
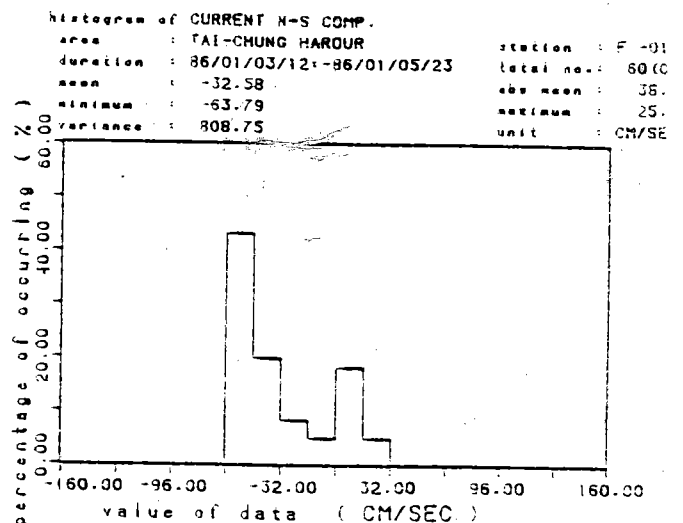
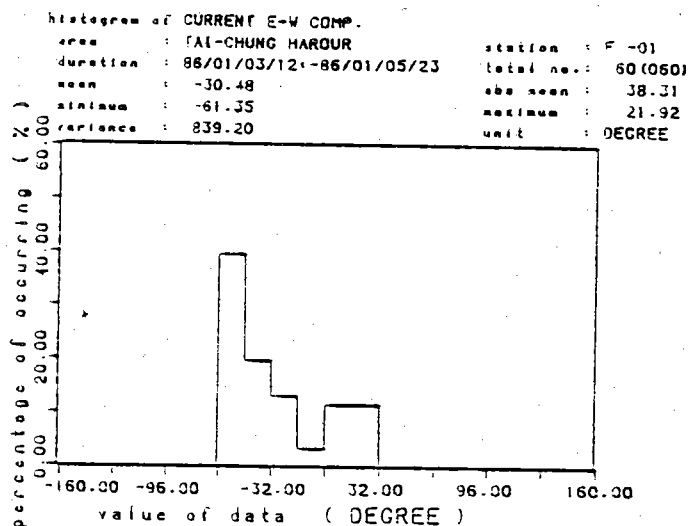
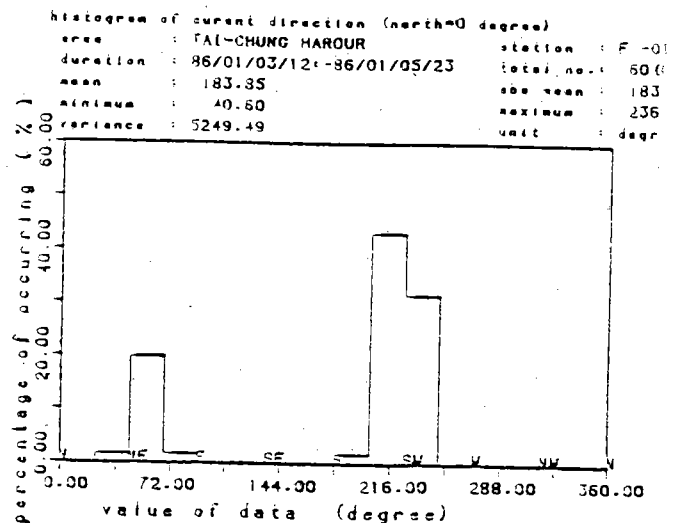
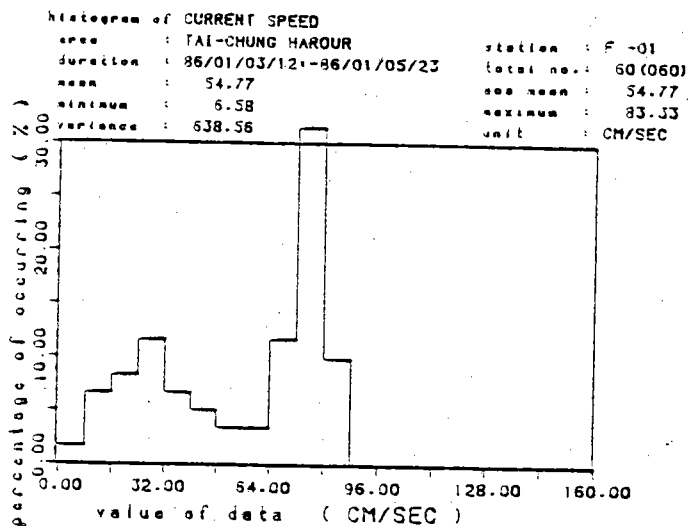


圖 II - 9 (a)

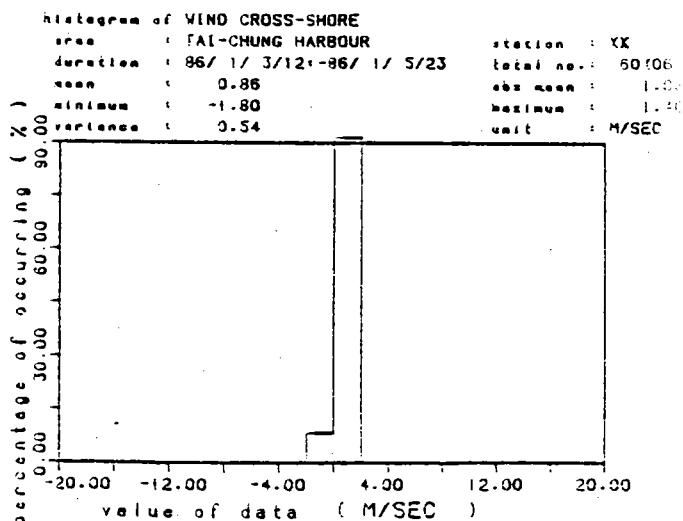
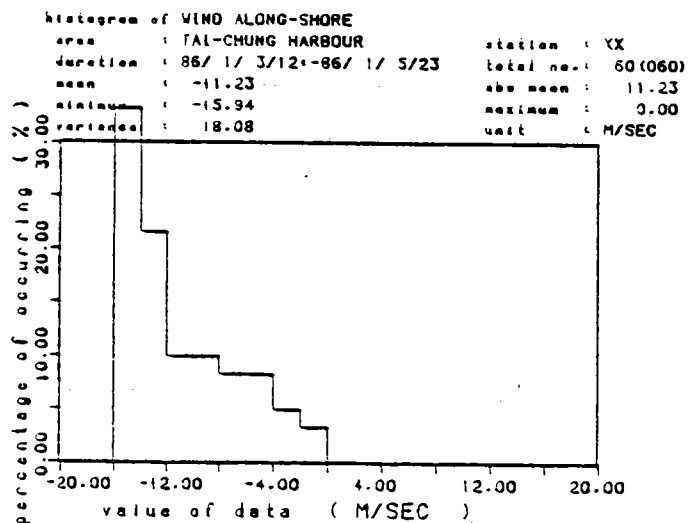
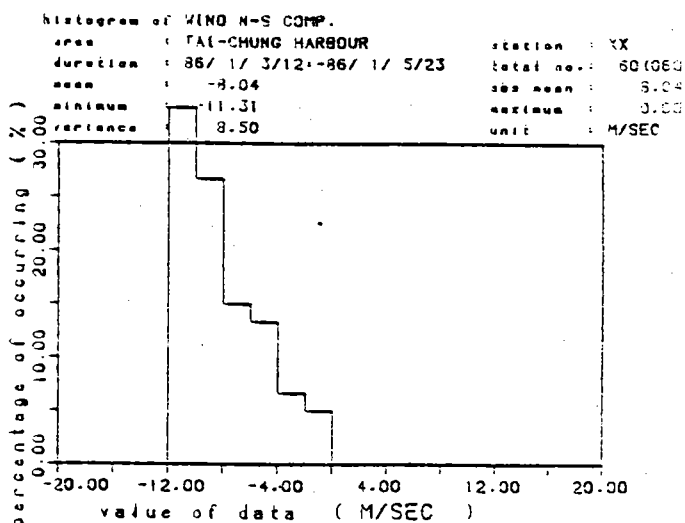
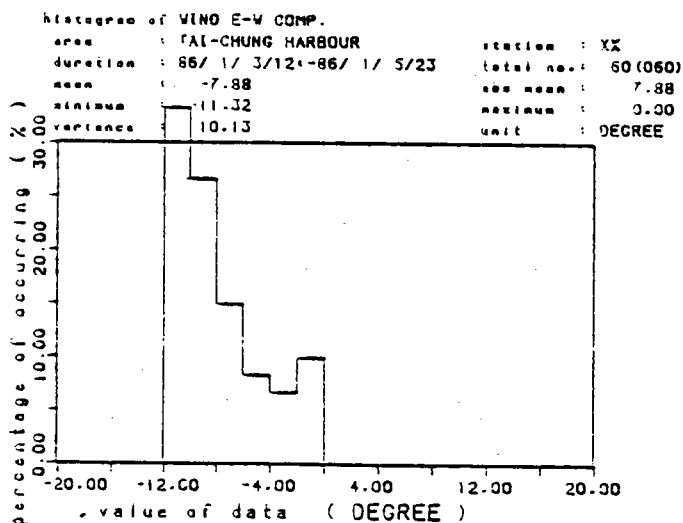
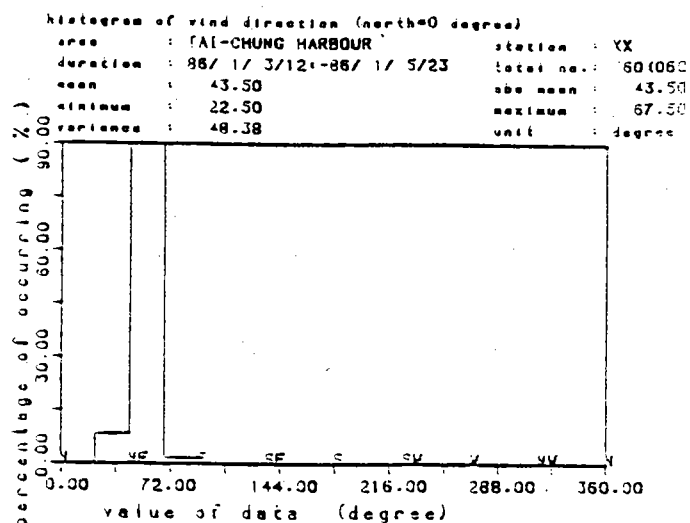
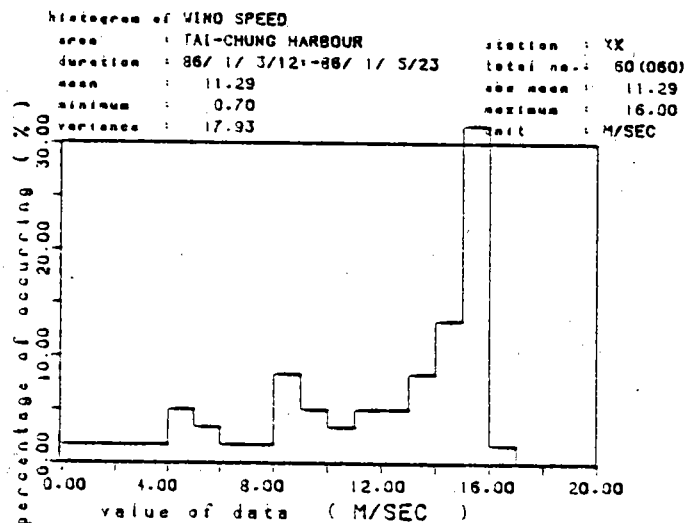


圖 II - 9 (b)

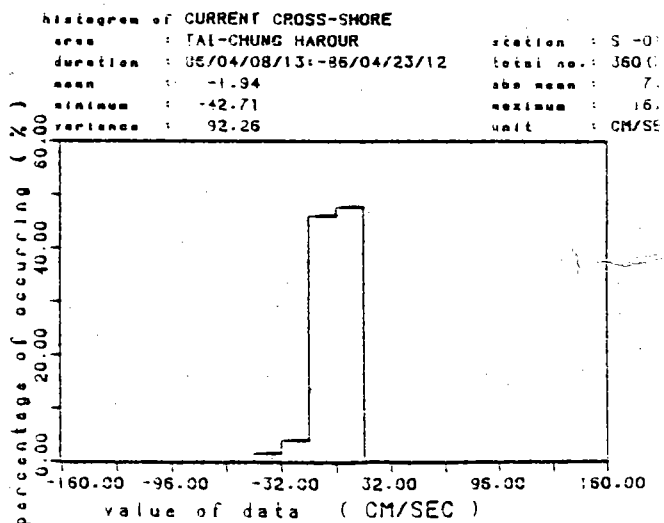
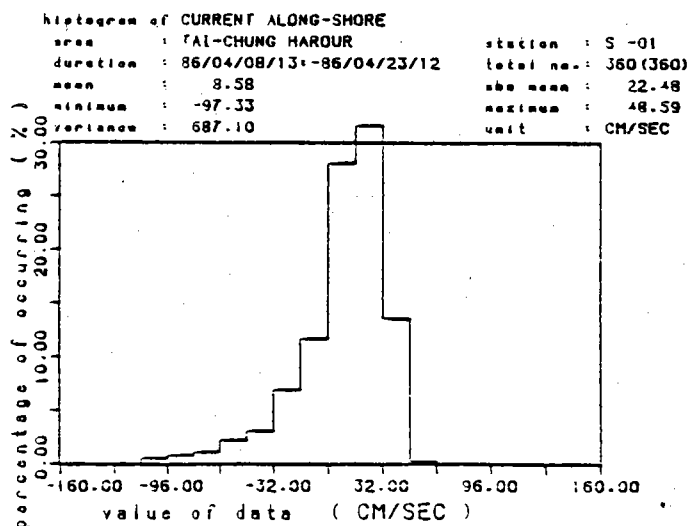
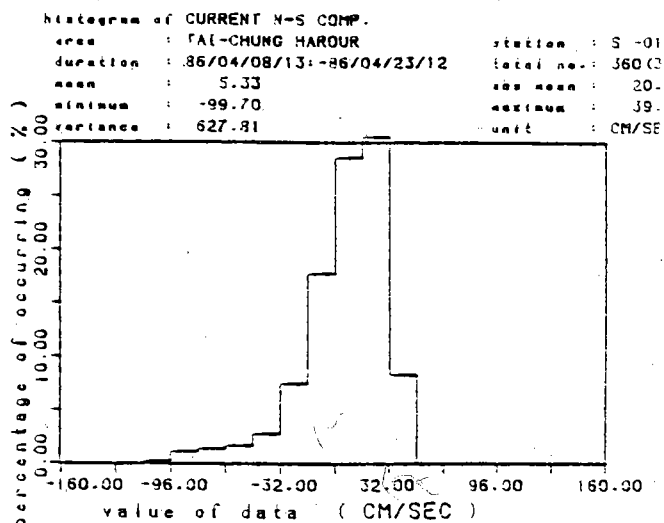
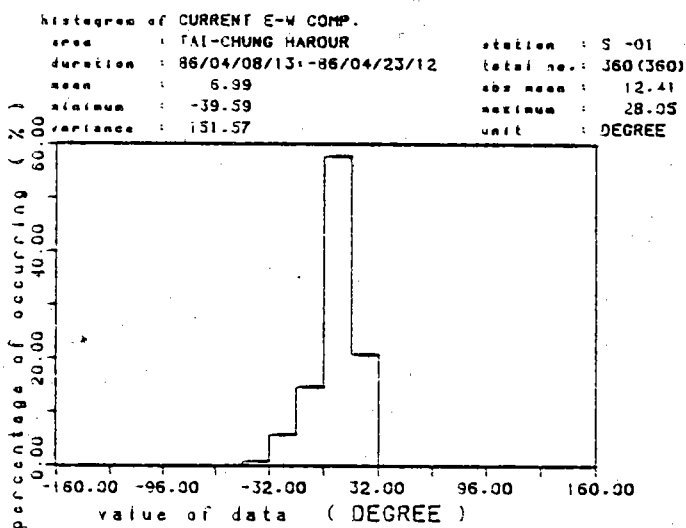
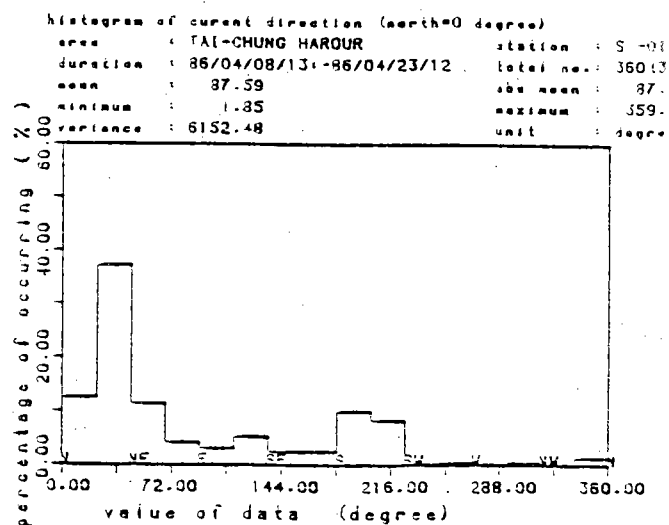
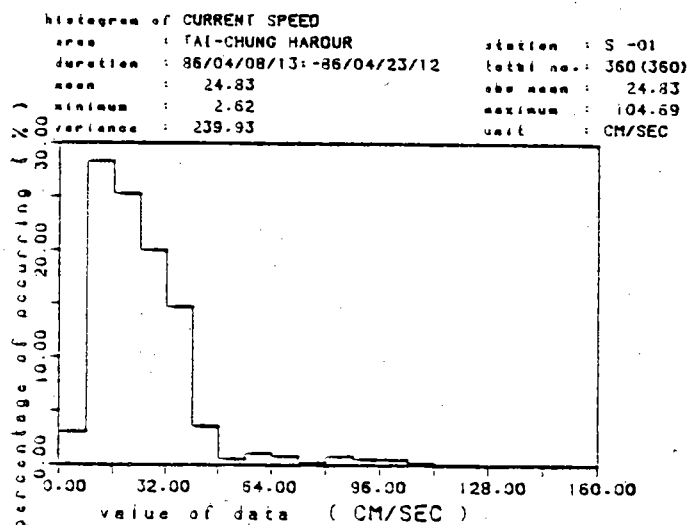


圖 II - 10 (a)

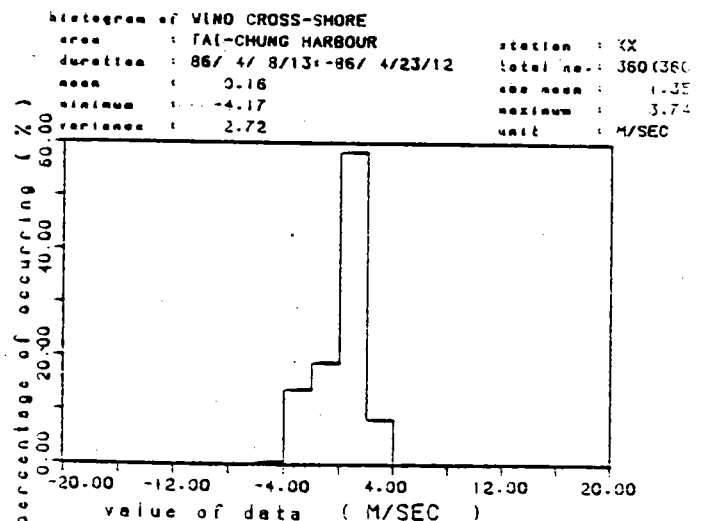
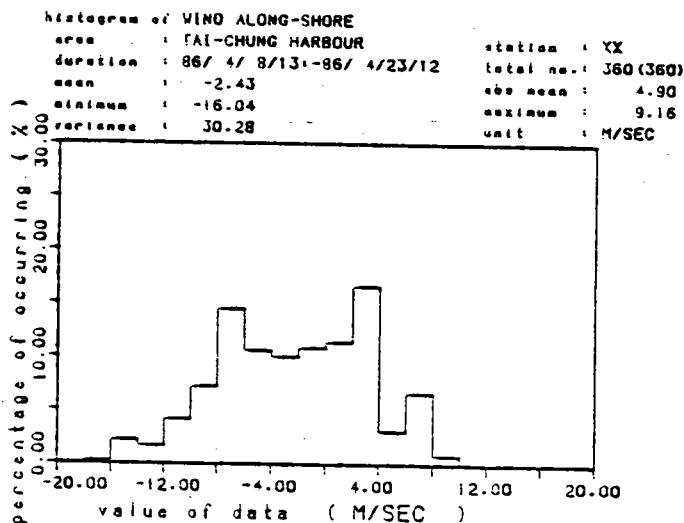
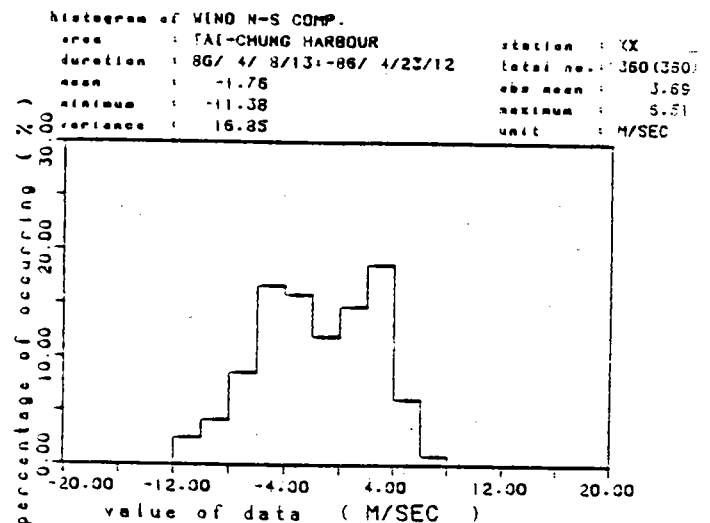
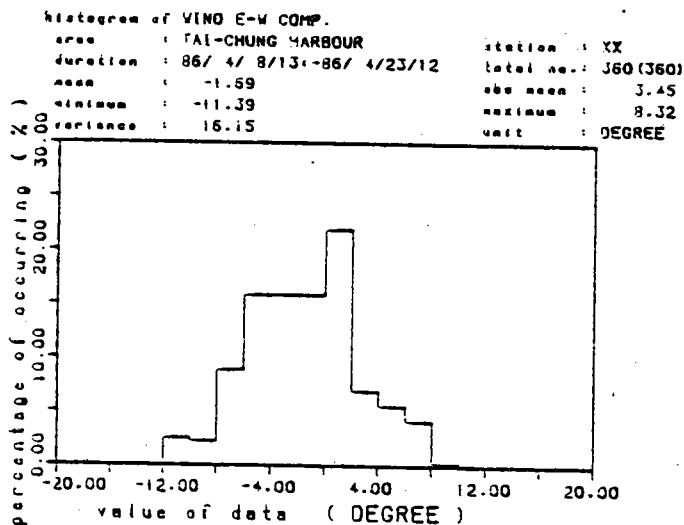
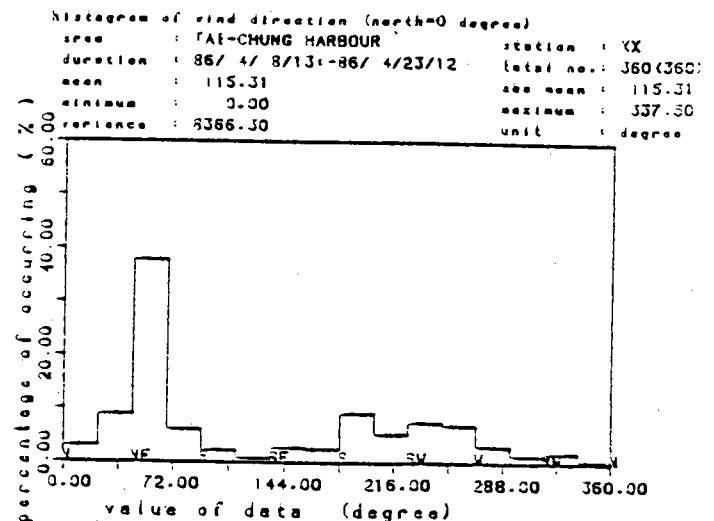
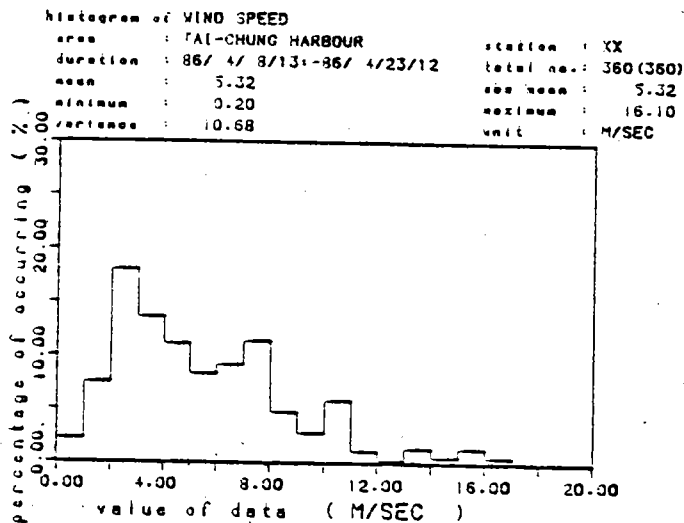


圖 II - 10 (b)

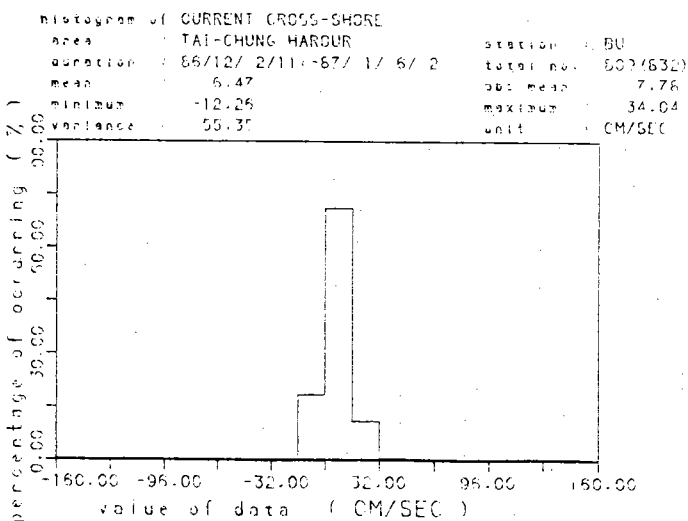
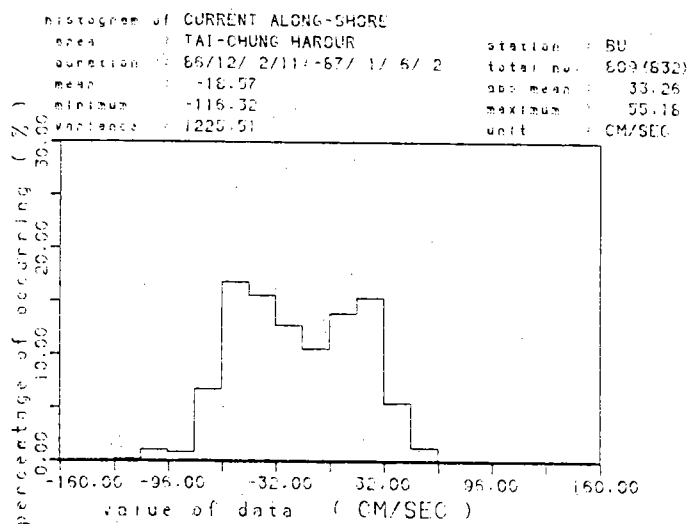
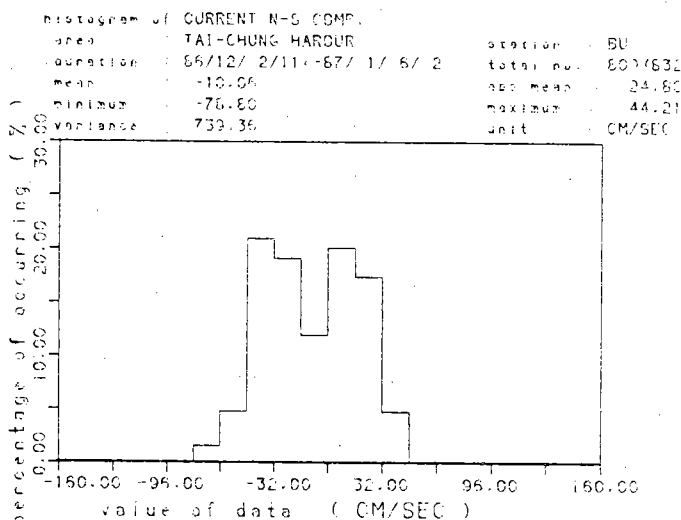
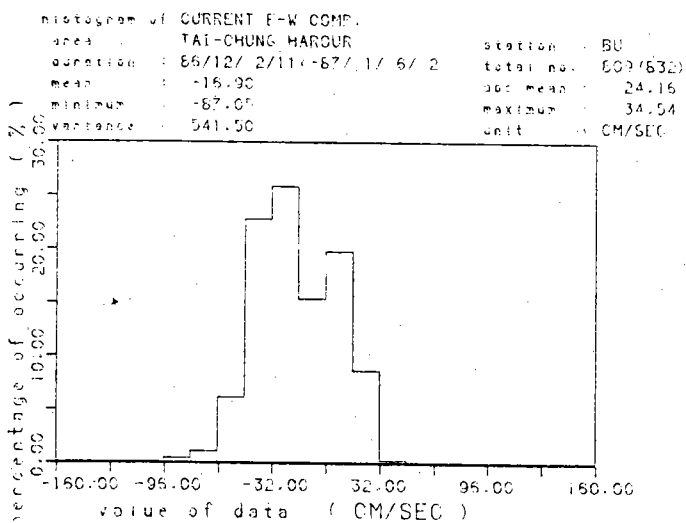
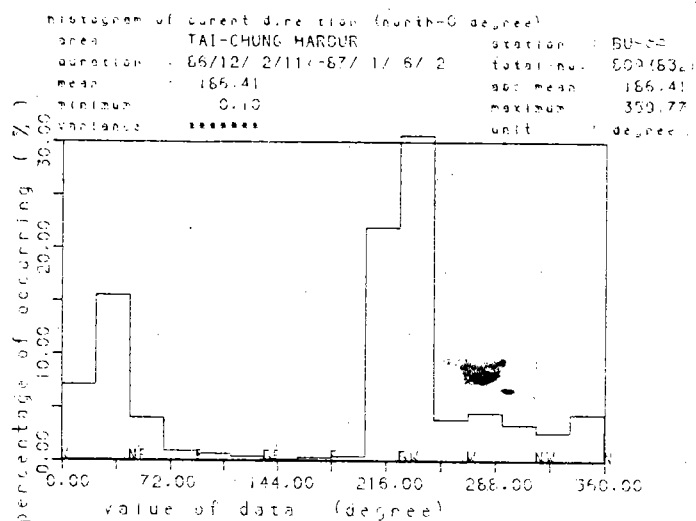
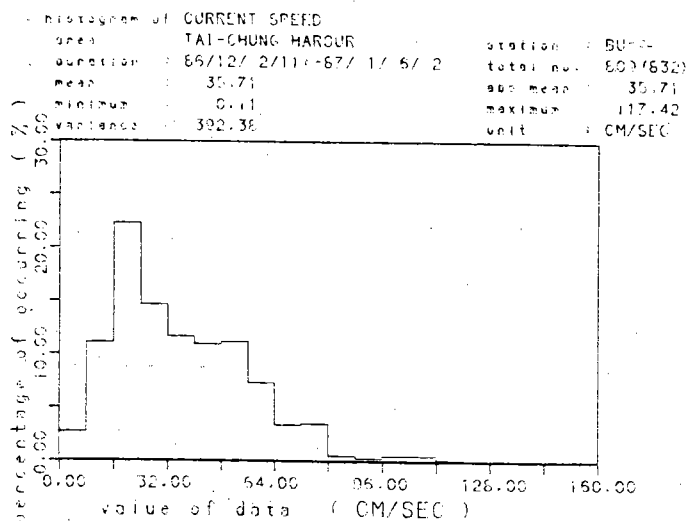


圖 II - 12 (a)

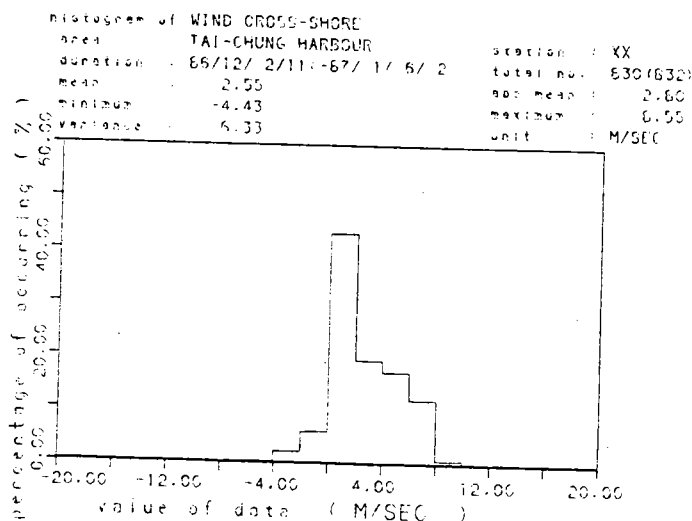
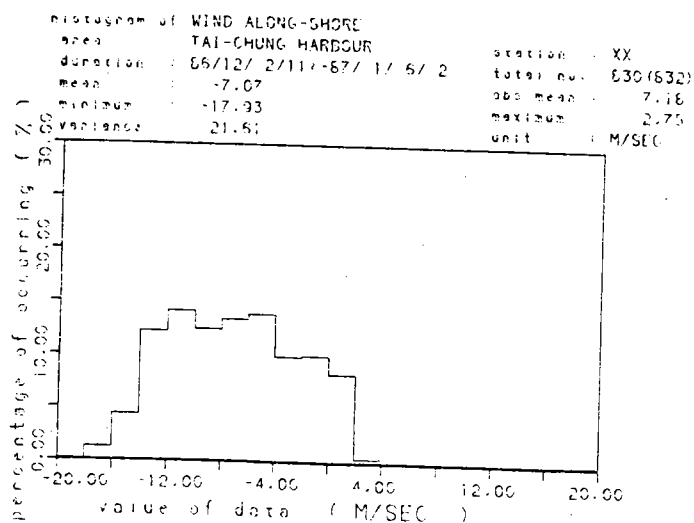
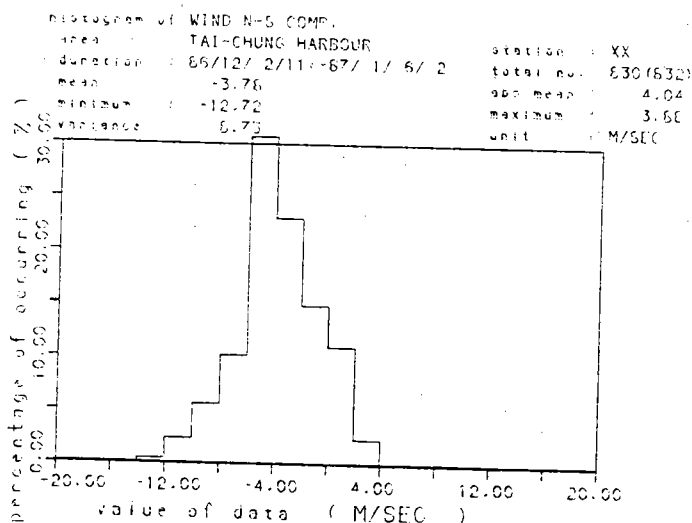
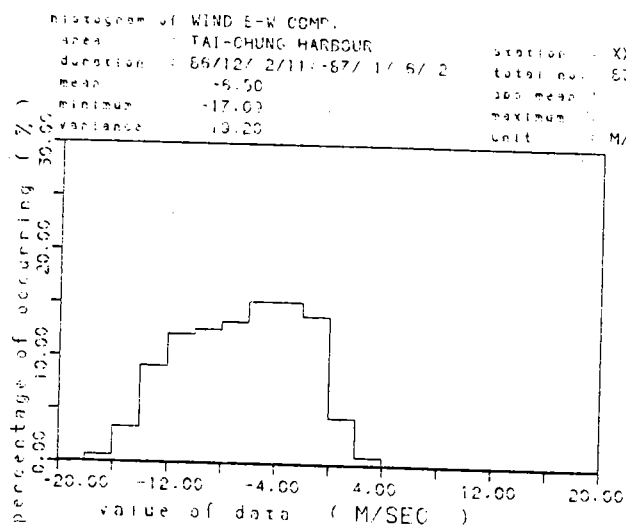
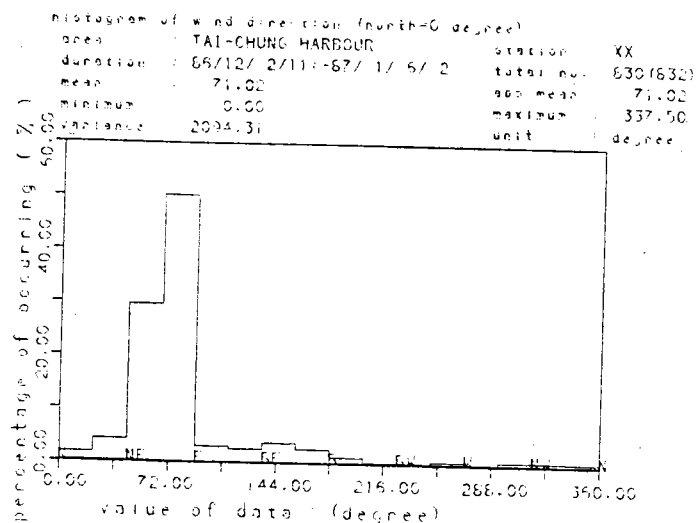
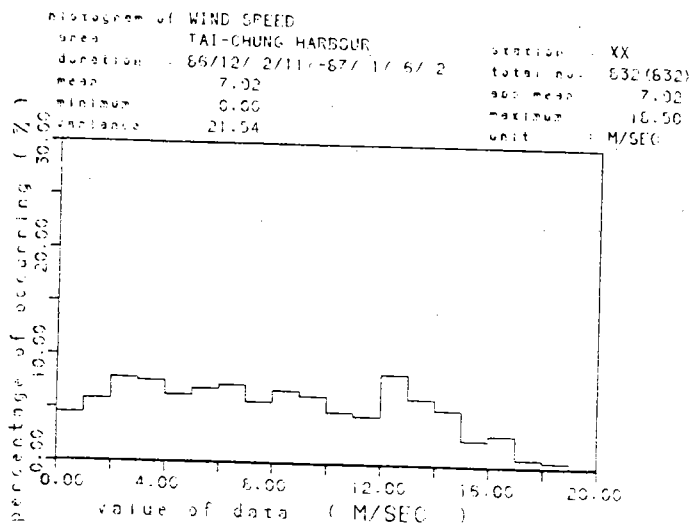


圖 II - 12 (b)

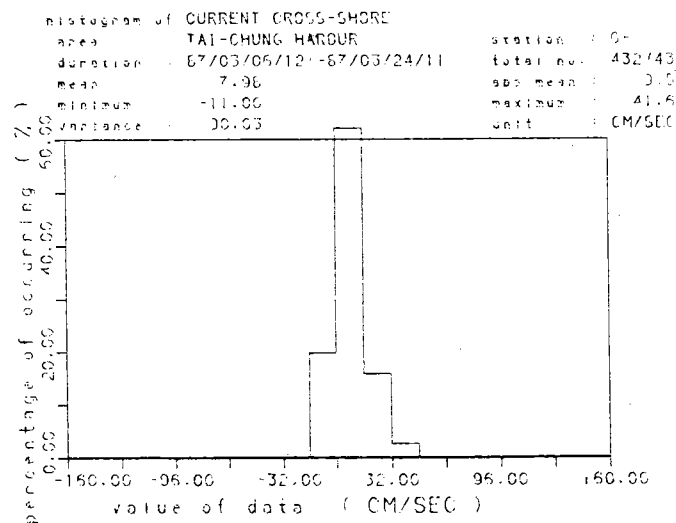
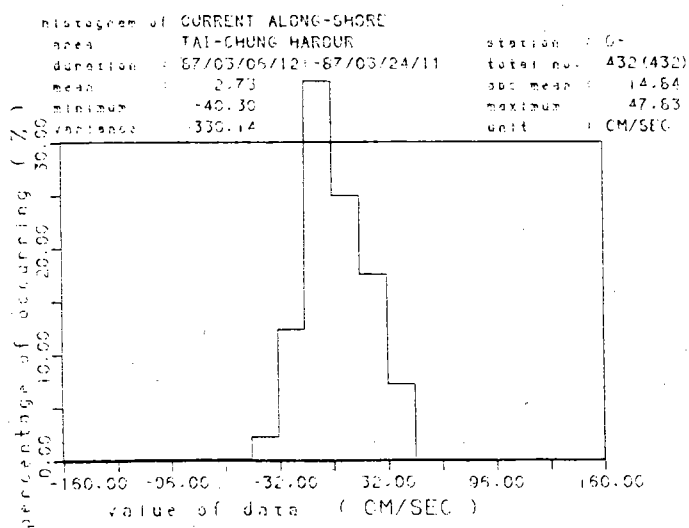
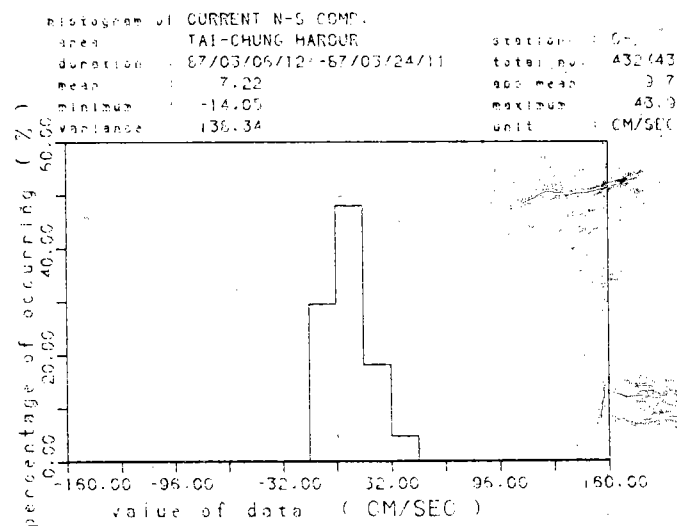
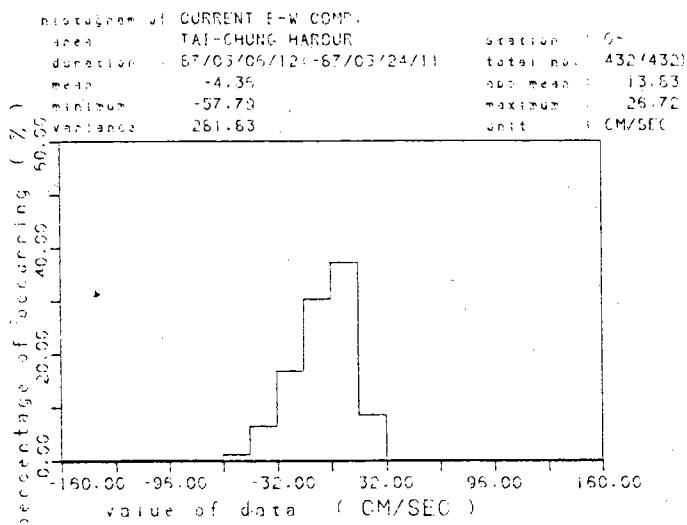
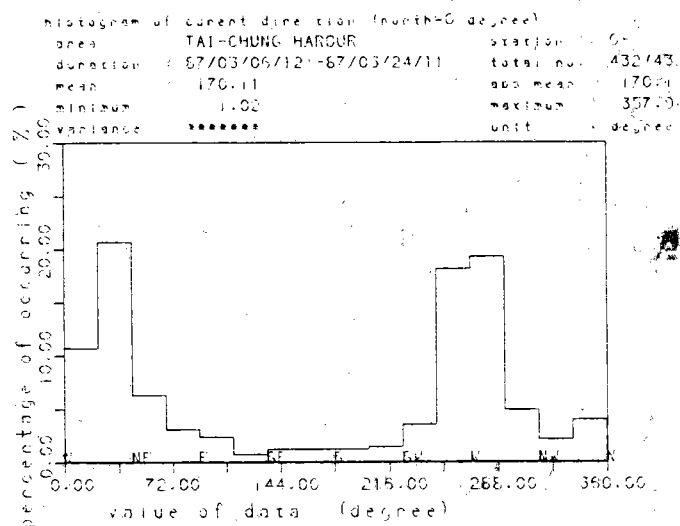
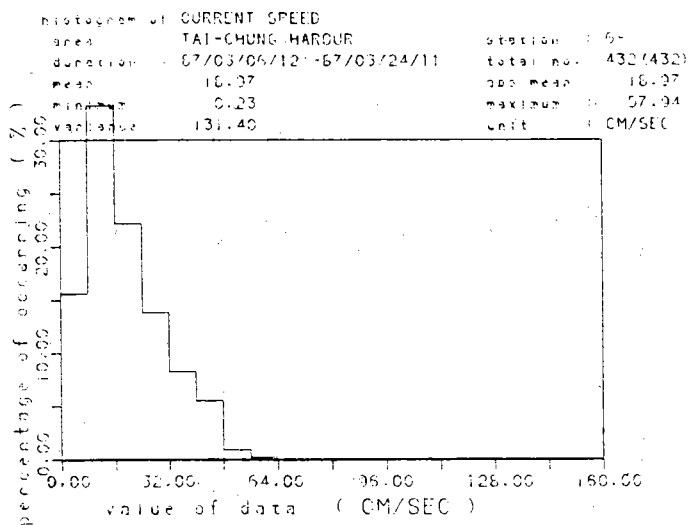


圖 II - 13 (a)

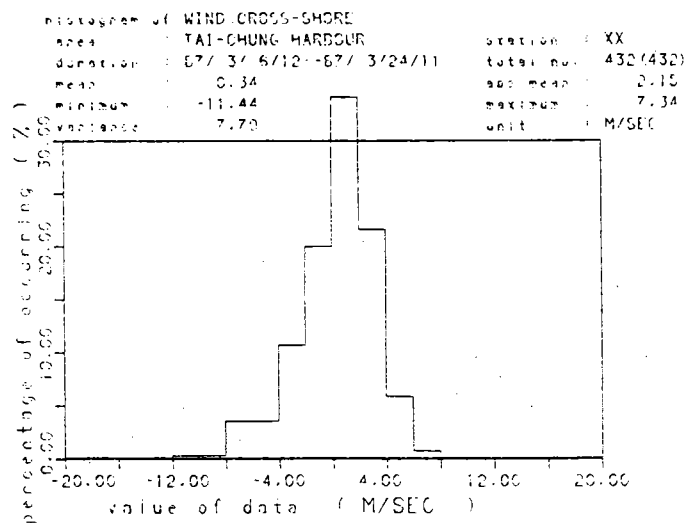
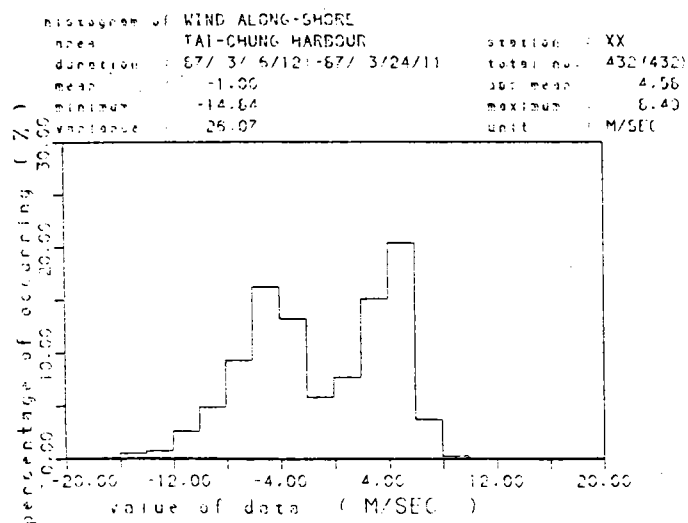
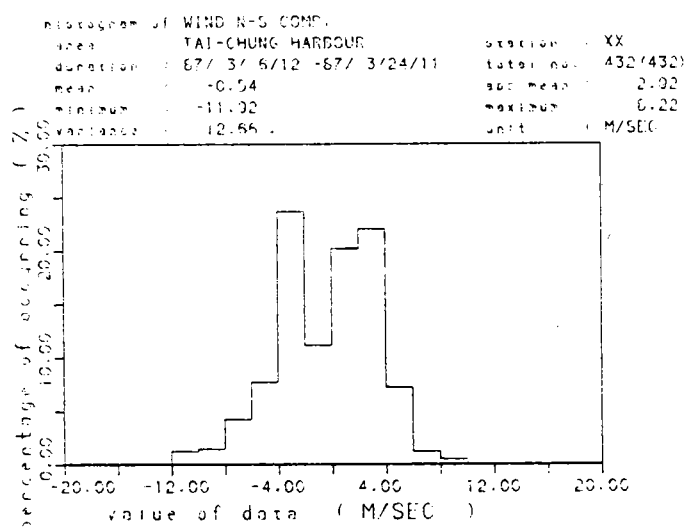
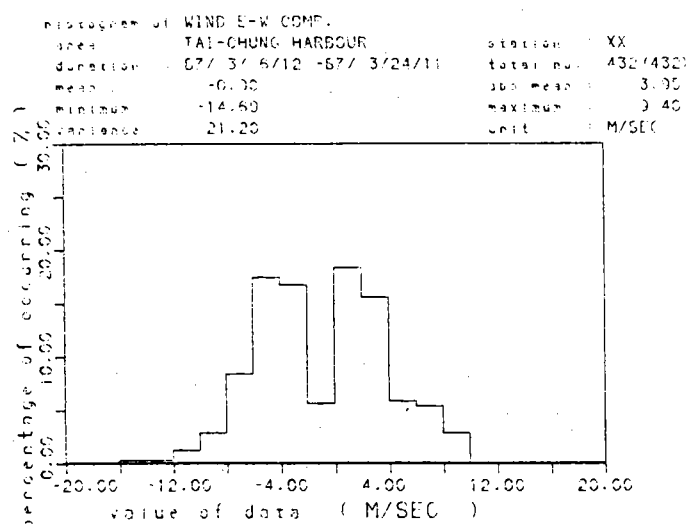
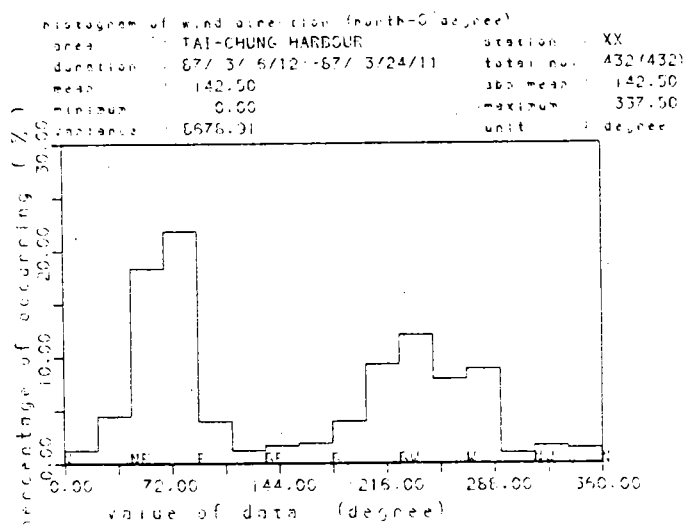
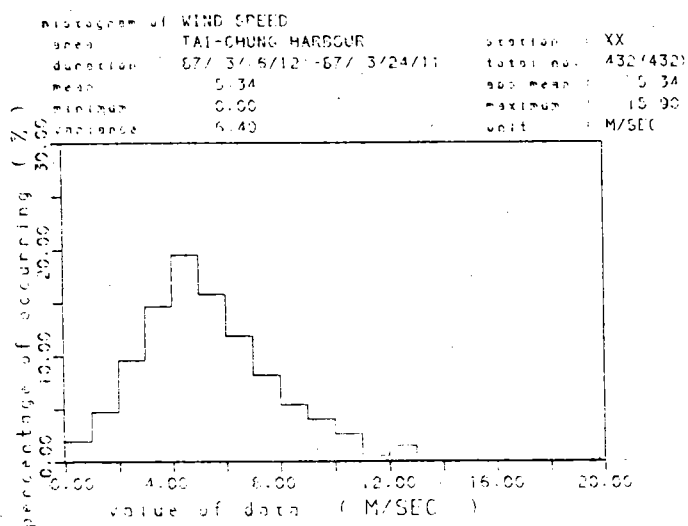


圖 II - 13 (b)

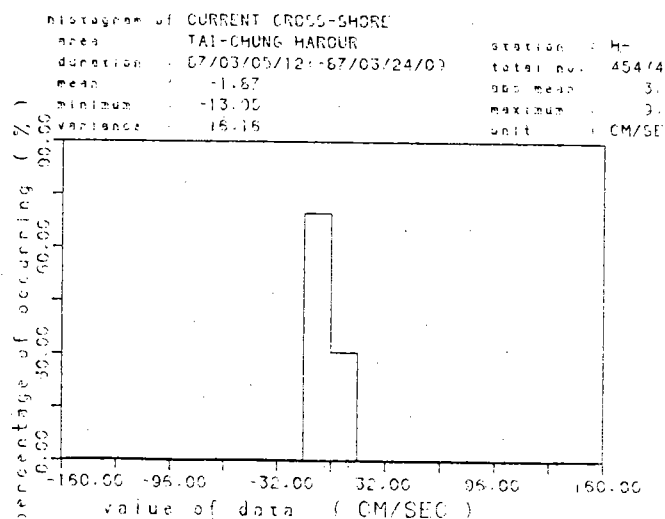
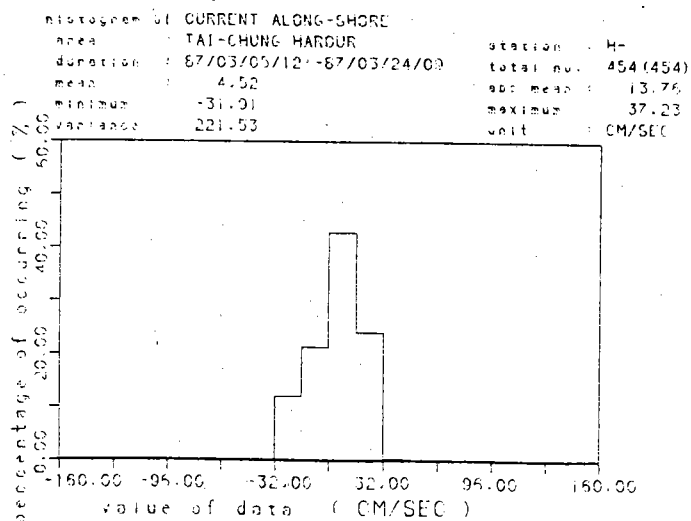
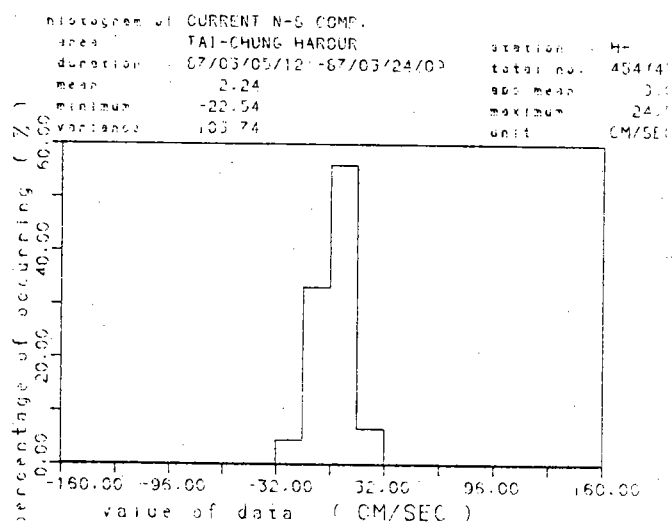
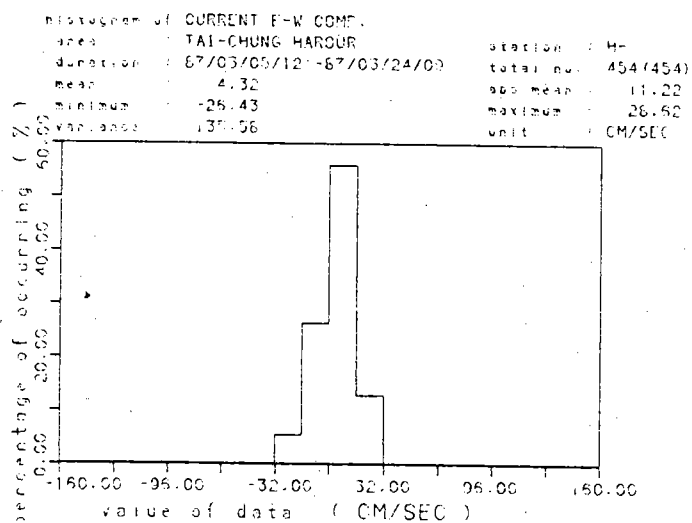
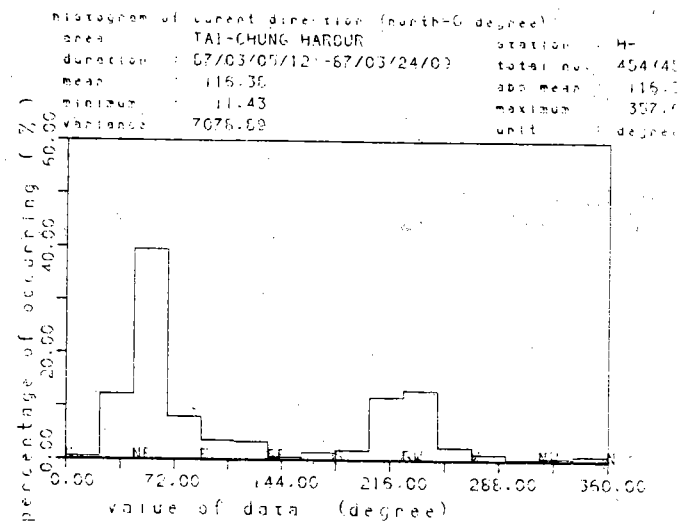
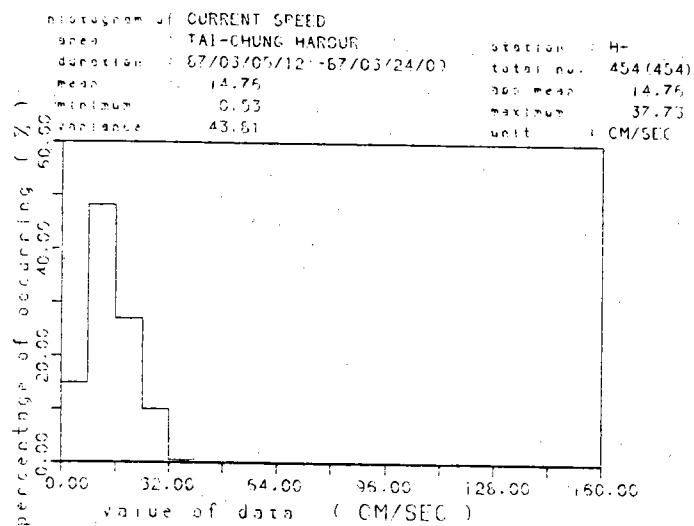


圖 II - 14 (a)

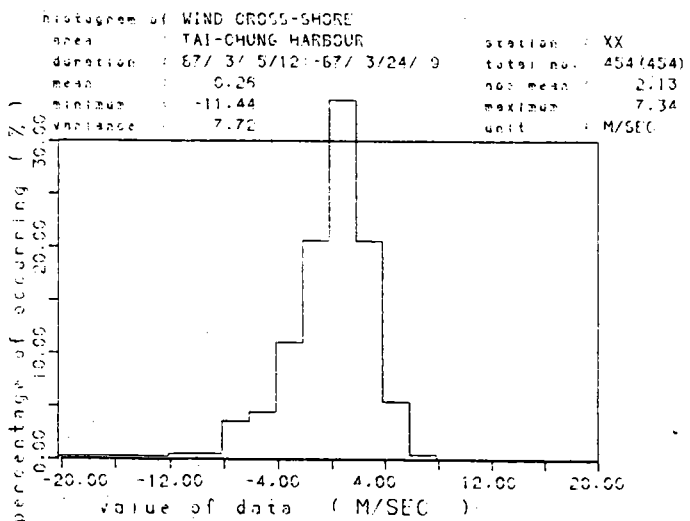
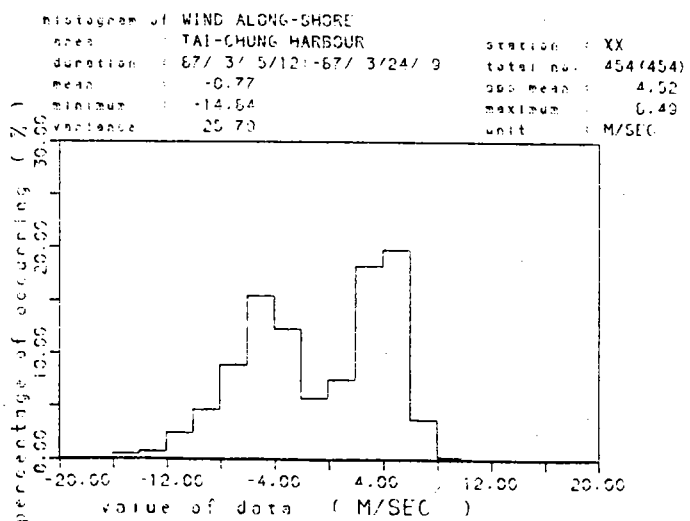
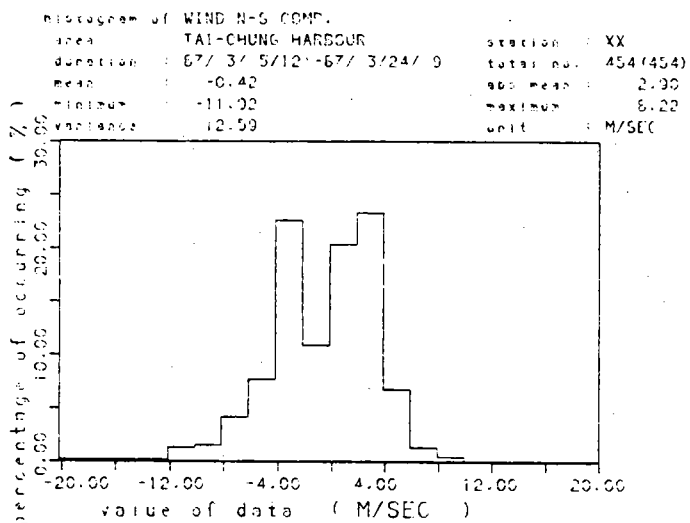
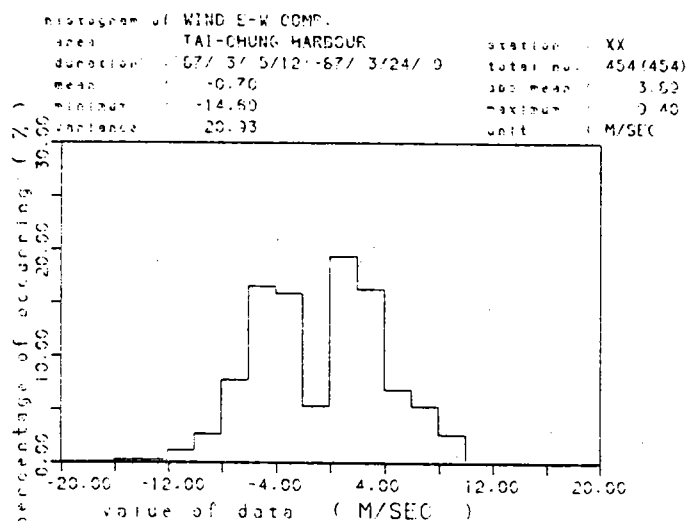
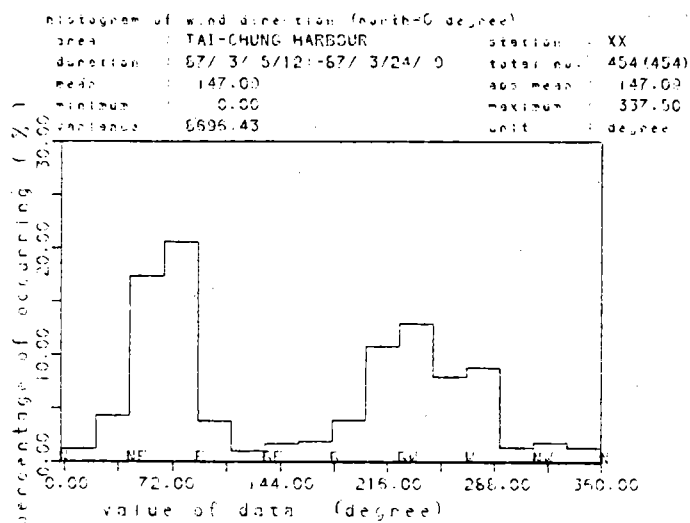
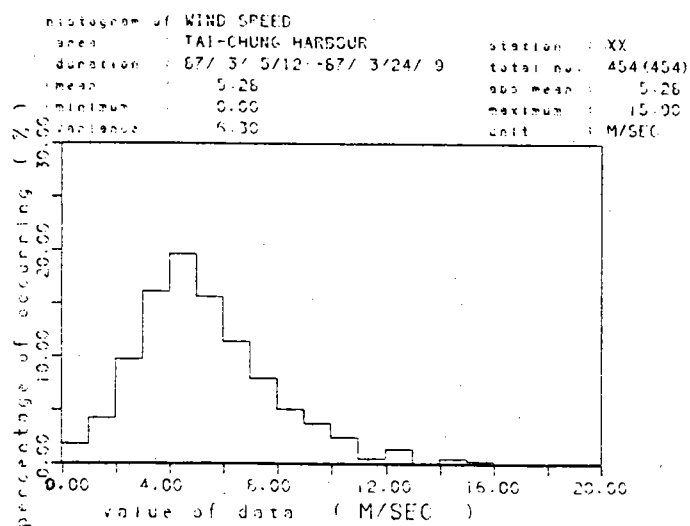


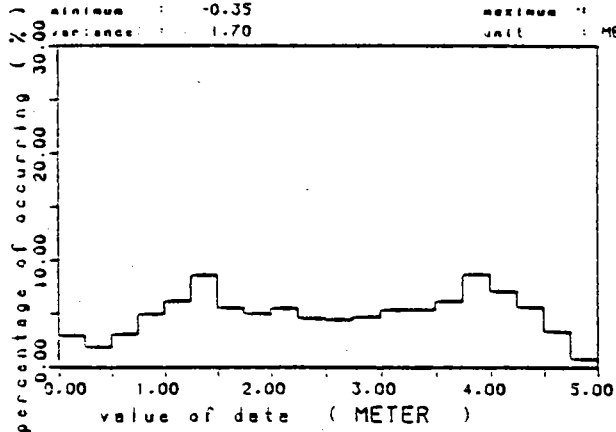
圖 II - 14 (b)

附 圖 III

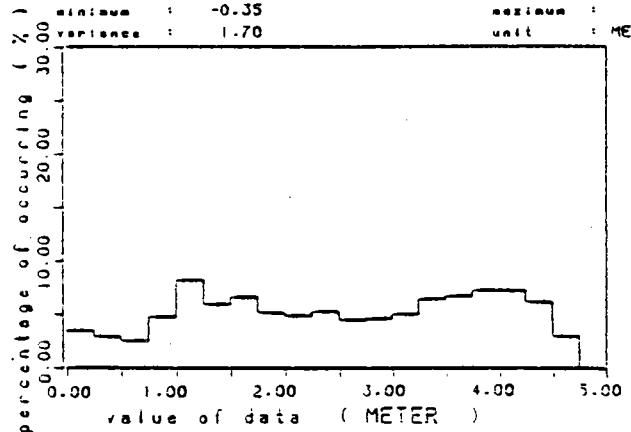
每月潮位統計方塊圖及能譜圖

圖 號	項 目	備 註
III - 1	潮位統計方塊圖	
III - 2	潮位能譜圖	

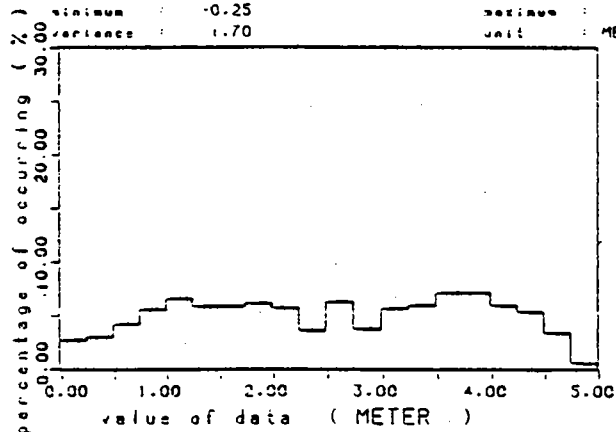
histogram of TIDAL LEVEL
 area : TAI-CHUNG HARBOUR station : XX
 duration : 85-12-01.01:-86-01- 1.00 total no.: 744(744)
 mean : 2.54 abs mean : 2.55
 minimum : -0.35 maximum : 4.90
 variance : 1.70 unit : METER



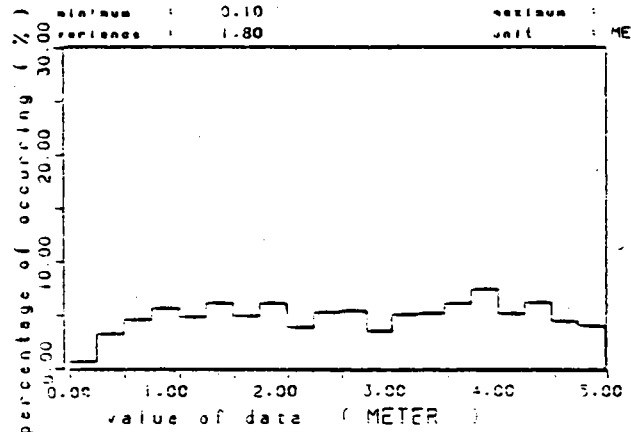
histogram of TIDAL LEVEL
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86-01-01.01:-86-02- 1.00 total no.: 744(744)
 mean : 2.50 abs mean : 2.50
 minimum : -0.35 maximum : 4.74
 variance : 1.70 unit : METER



histogram of TIDAL LEVEL
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86-02-01.01:-86-03- 1.00 total no.: 672(672)
 mean : 2.48 abs mean : 2.48
 minimum : -0.25 maximum : 4.90
 variance : 1.70 unit : METER



histogram of TIDAL LEVEL
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86-03-01.01:-86-04- 1.00 total no.: 744(744)
 mean : 2.67 abs mean : 2.67
 minimum : 0.10 maximum : 5.09
 variance : 1.80 unit : METER



histogram of TIDAL LEVEL
 area : TAI-CHUNG HARBOUR station : XX
 duration : 86-04-01.01:-86-05- 1.00 total no.: 720(720)
 mean : 2.65 abs mean : 2.65
 minimum : -0.17 maximum : 4.95
 variance : 1.59 unit : METER

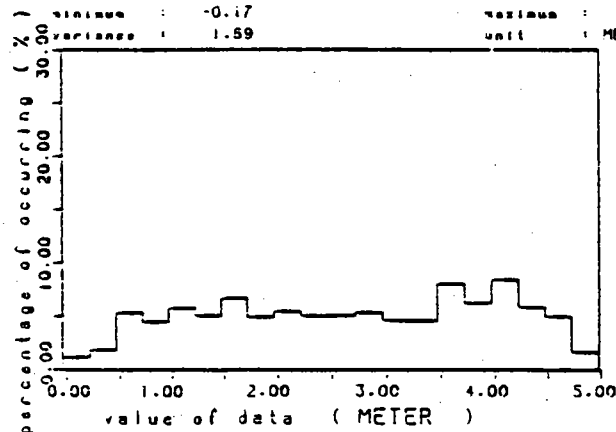
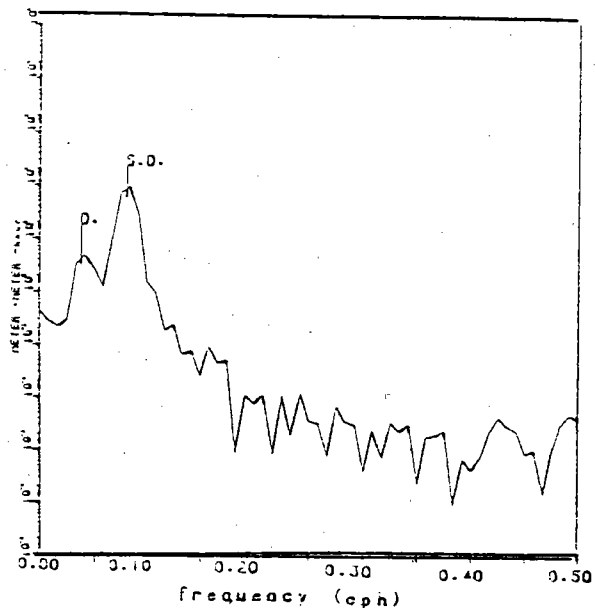


圖 III - 1

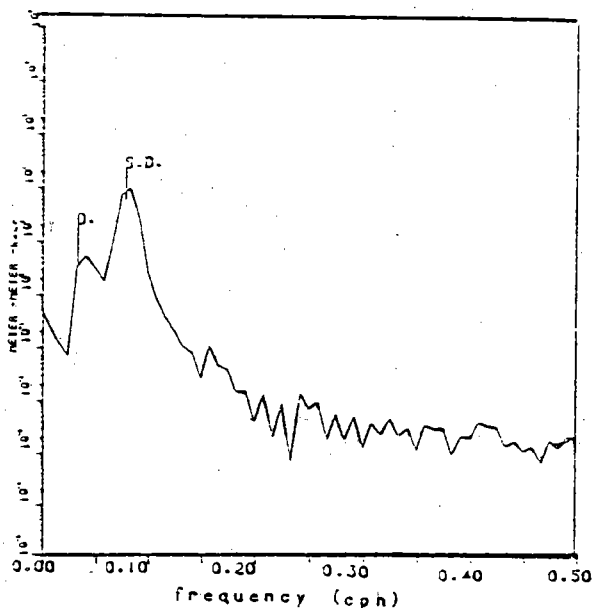
SPTRAL DENSITY FUNCTION

• DATE : 86-02-01.01:00-86-03- 1.00:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : TIDAL LEVEL
 S.D. (T = 12.00 HR) .AMPL = 1.66 (METER)
 D. (T = 24.00 HR) .AMPL = 0.37 (METER).



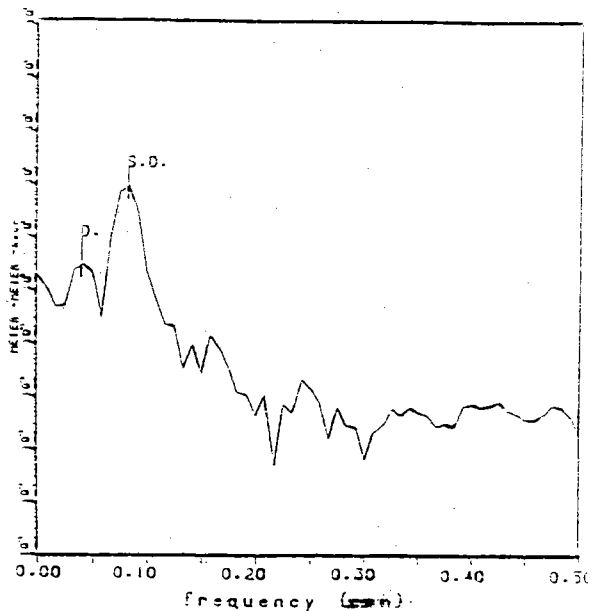
SPTRAL DENSITY FUNCTION

• DATE : 85-12-01.01:00-86-01- 1.00:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : TIDAL LEVEL
 S.D. (T = 12.00 HR) .AMPL = 1.57 (METER)
 D. (T = 24.00 HR) .AMPL = 0.38 (METER).



SPTRAL DENSITY FUNCTION

• DATE : 86-03-01.01:00-86-04- 1.00:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : TIDAL LEVEL
 S.D. (T = 12.00 HR) .AMPL = 1.71 (METER)
 D. (T = 24.00 HR) .AMPL = 0.31 (METER).



SPTRAL DENSITY FUNCTION

• DATE : 86-01-01.01:00-86-02- 1.00:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : TIDAL LEVEL
 S.D. (T = 12.00 HR) .AMPL = 1.57 (METER)
 D. (T = 24.00 HR) .AMPL = 0.39 (METER).

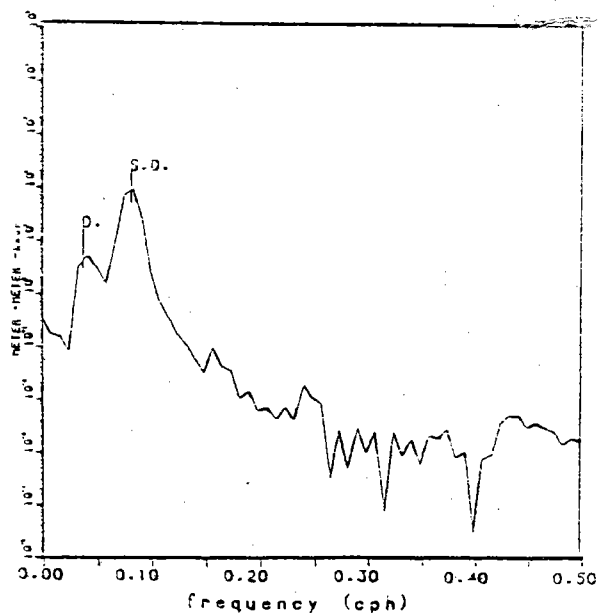


圖 III - 2 (a)''

SPTAL DENSITY FUNCTION

• DATE : 86-04-01:01:00~86-05- 1.00:0
• AREA TYPE : TAI-CHUNG HARBOUR
• STATION : XX
• DATA NAME : TIDAL LEVEL
S.D. (T = 12.00 HR) .AMPL = 1.68 (METER)
D. (T = 24.00 HR) .AMPL = 0.33 (METER).

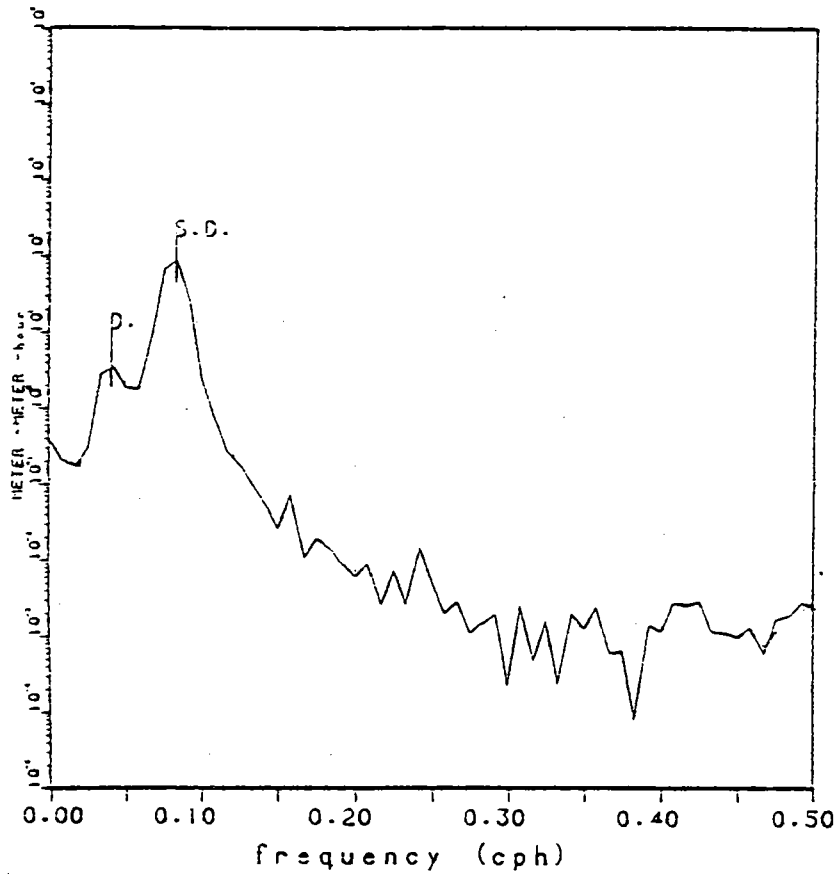


圖 III - 2 (b)

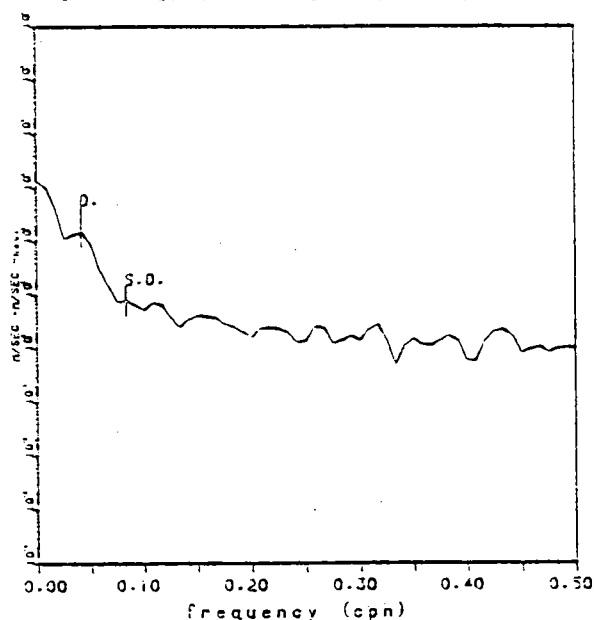
附 圖 IV

流速與風速沿岸及向（離）岸能譜圖

圖 號	時 間	測 站	備 註
IV - 1	86/01/16-01/29	BU	
IV - 2	86/01/16-01/29	BD	
IV - 3	86/02/03-02/25	BU	
IV - 4	86/02/03-02/25	BD	
IV - 5	86/03/07-04/03	BD	
IV - 6	86/04/04-04/23	BD	
IV - 7	86/03/08-04/03	D	
IV - 8	85/12/27-86/01/18	E	
IV - 9	86/04/08-04/23	S	
IV - 10	86/12/19-87/01/06	BU	
IV - 11	87/03/06-03/24	G	
IV - 12	87/03/05-03/24	H	

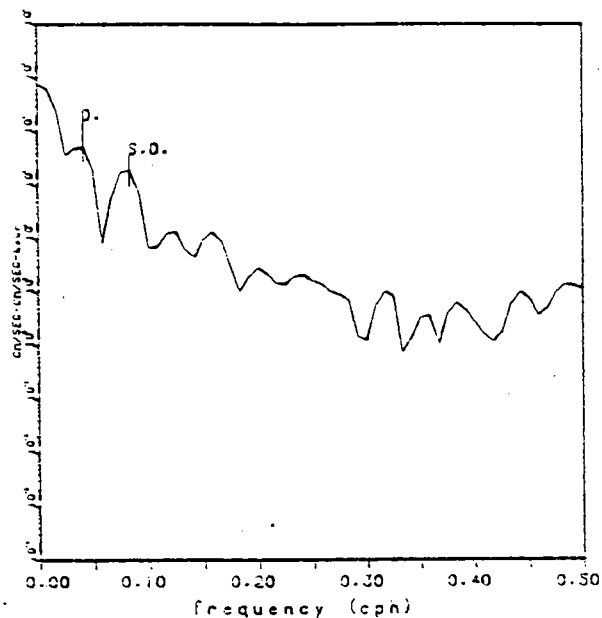
SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/23/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.49 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 2.17 (M/SEC).



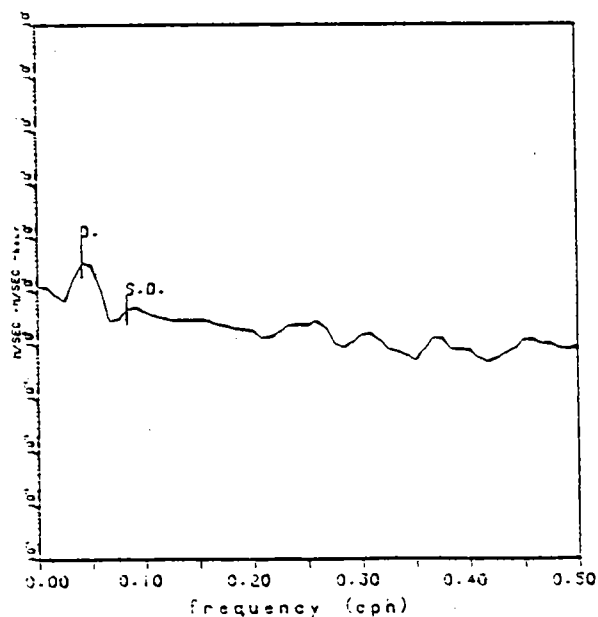
SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : BU-01
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 7.79 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 12.70 (CM/SEC).



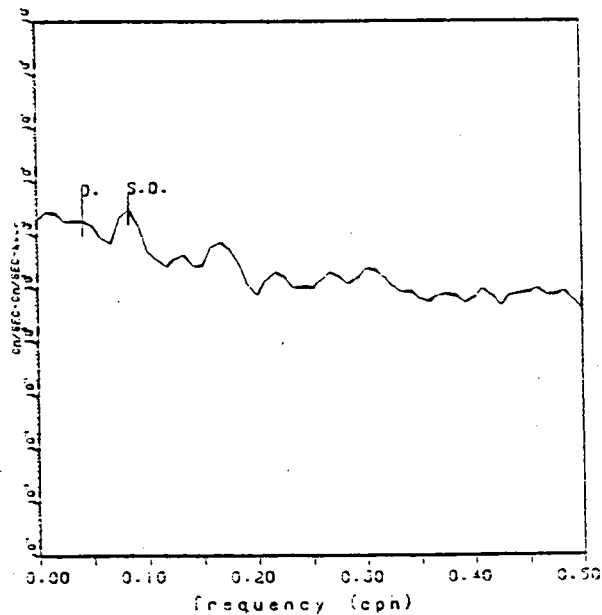
SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.38 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.05 (M/SEC).



SPTAL DENSITY FUNCTION

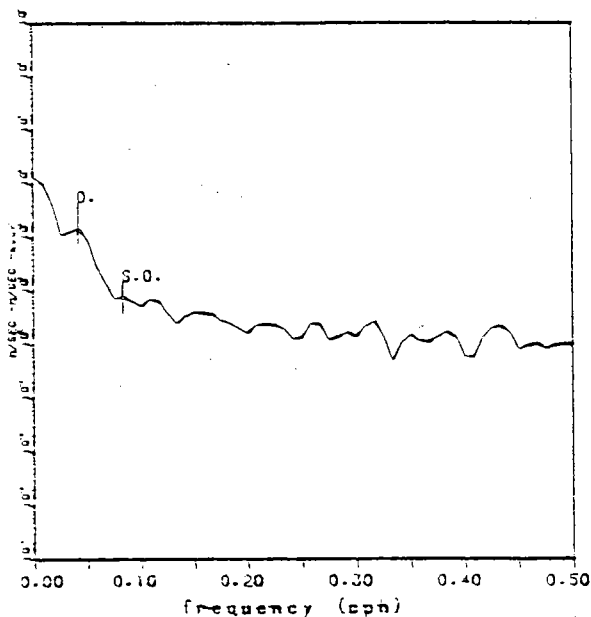
• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : BU-01
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 3.09 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 2.37 (CM/SEC).



圖IV - 1

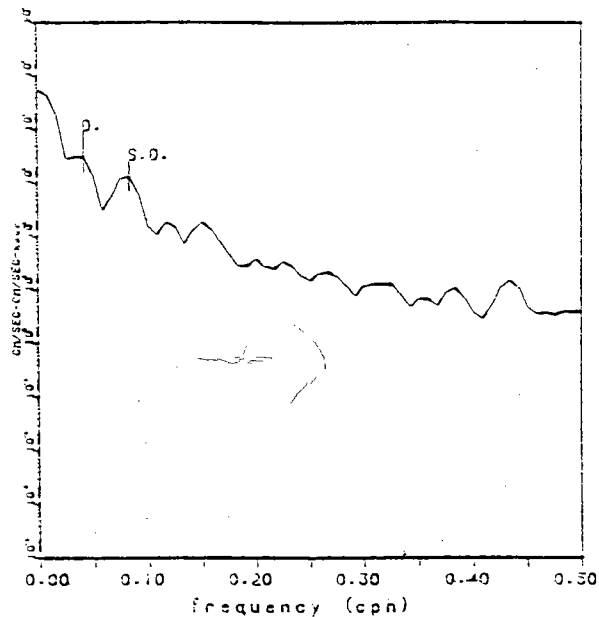
SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.49 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 2.17 (M/SEC).



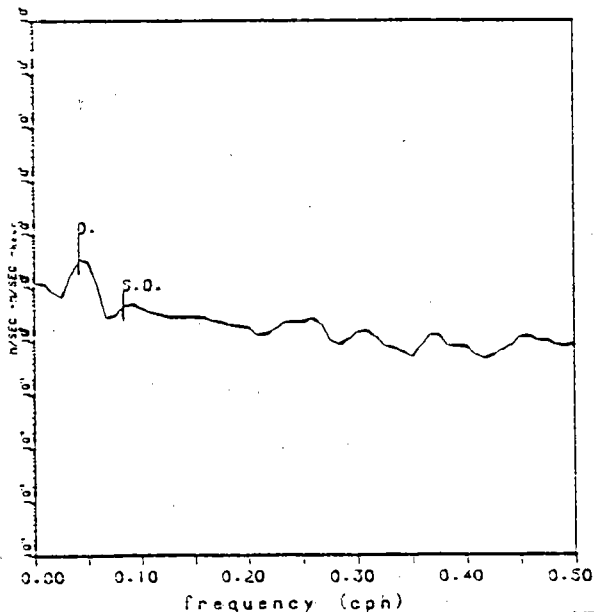
SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : BD-01
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 6.57 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 9.88 (CM/SEC).



SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.38 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.05 (M/SEC).



SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : BD-01
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 2.61 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 2.36 (CM/SEC).

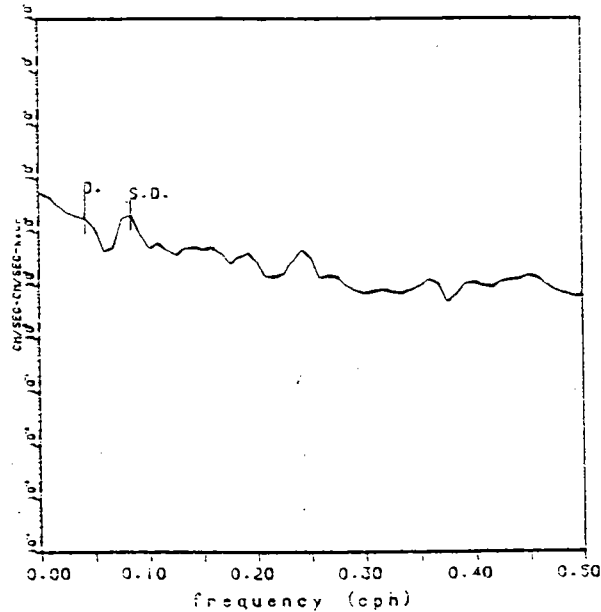
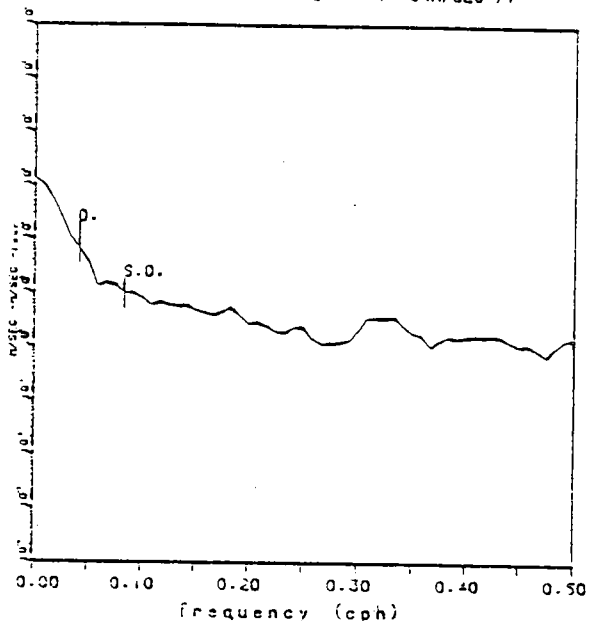


圖 IV - 2

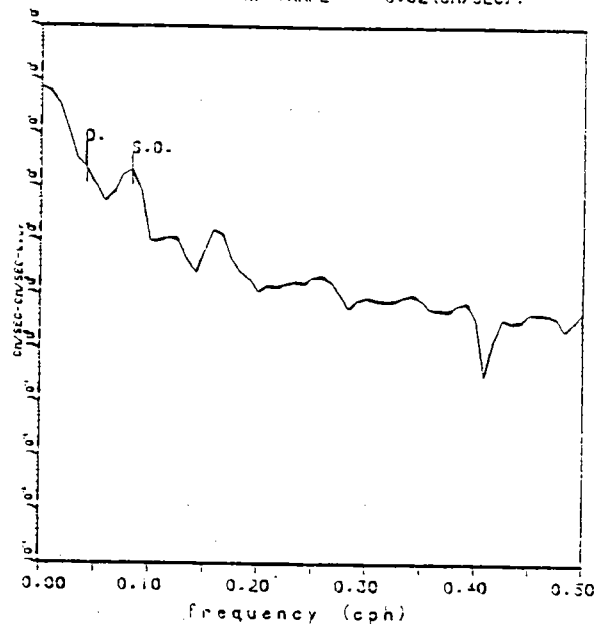
SPIRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : YX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.55 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.43 (M/SEC)



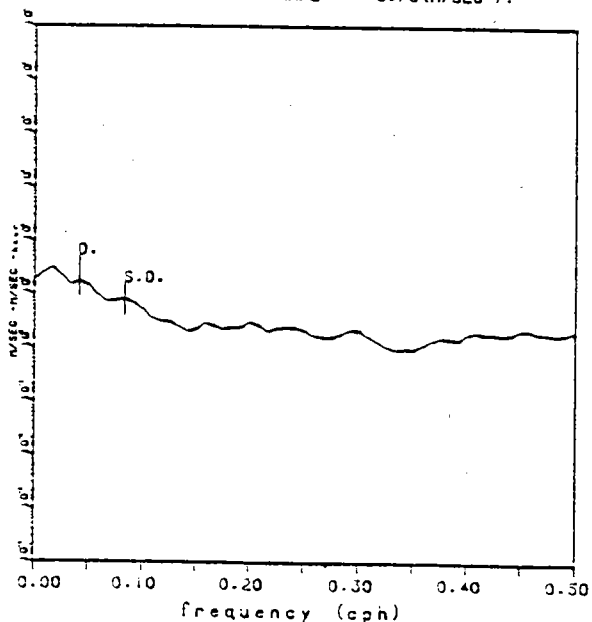
SPIRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : BU-01
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 3.12 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 3.32 (CM/SEC)



SPIRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : YX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.51 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 0.73 (M/SEC)



SPIRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : BU-01
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 2.60 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 2.47 (CM/SEC)

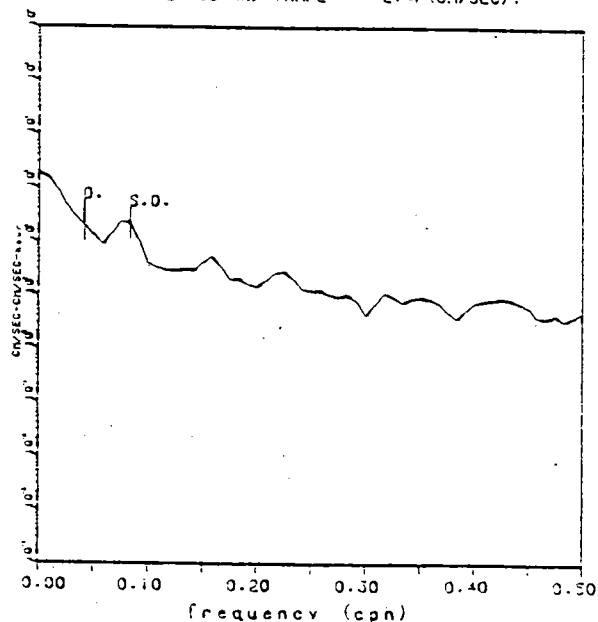
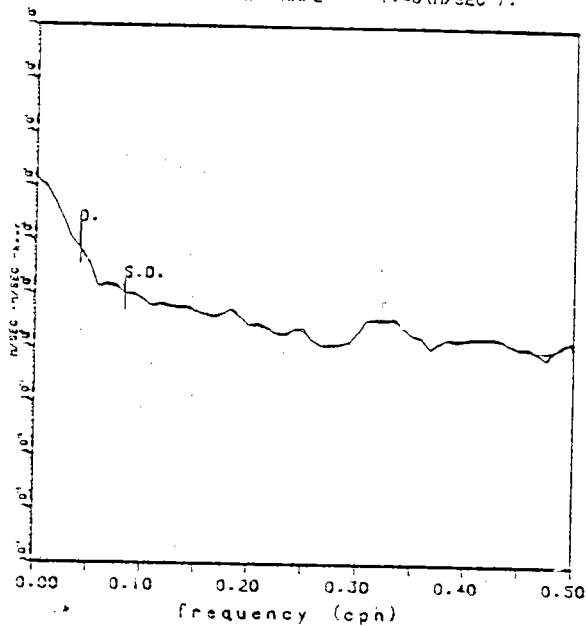


圖 IV - 3

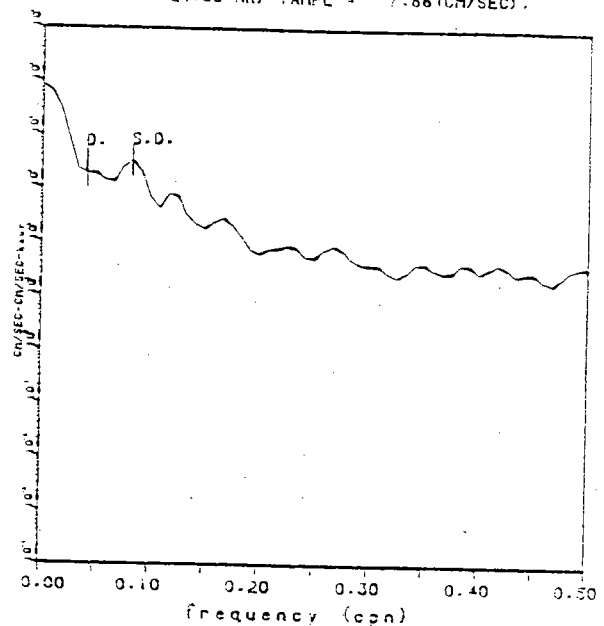
SPIRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.55 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.43 (M/SEC).



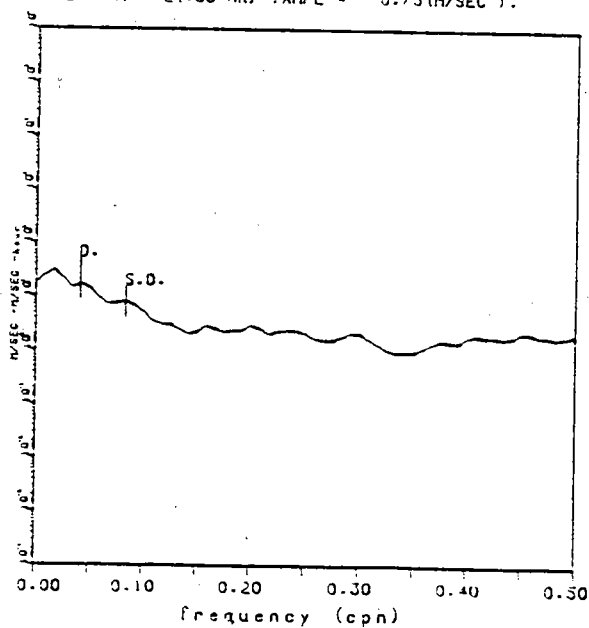
SPIRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : 9D-01
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 10.17 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 7.66 (CM/SEC).



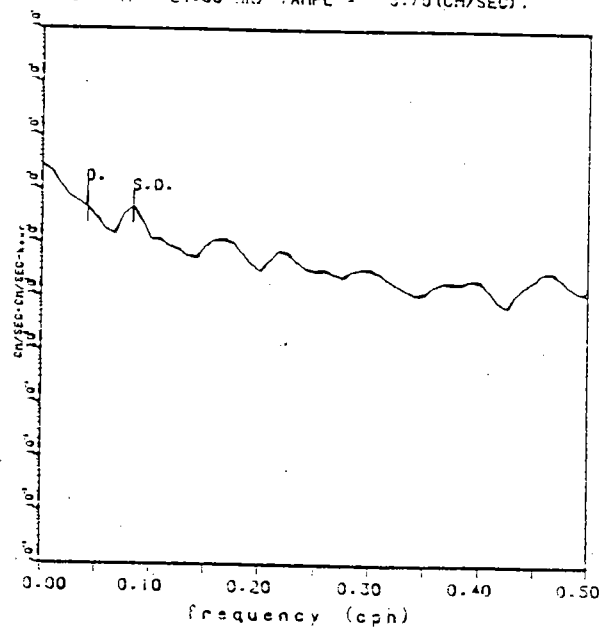
SPIRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.51 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 0.73 (M/SEC).



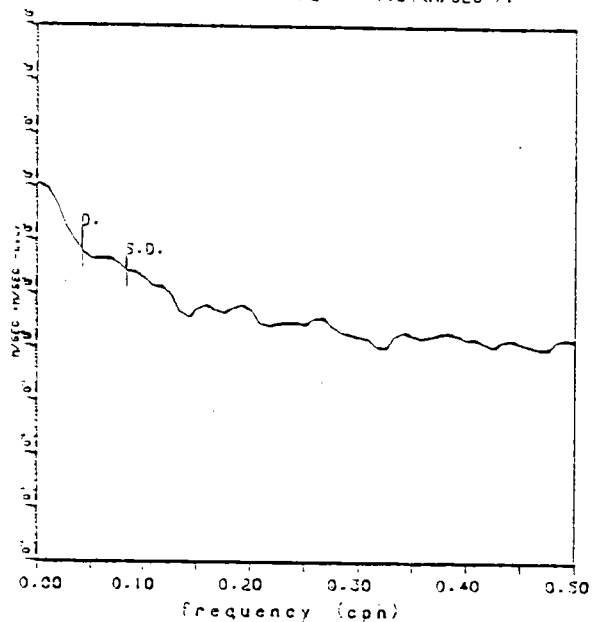
SPIRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : 9D-01
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 3.84 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 3.70 (CM/SEC).



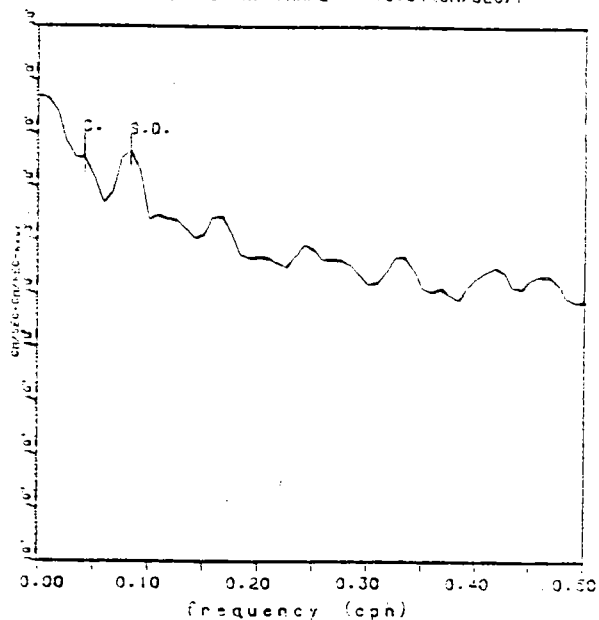
SPTAL DENSITY FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.31 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.34 (M/SEC).



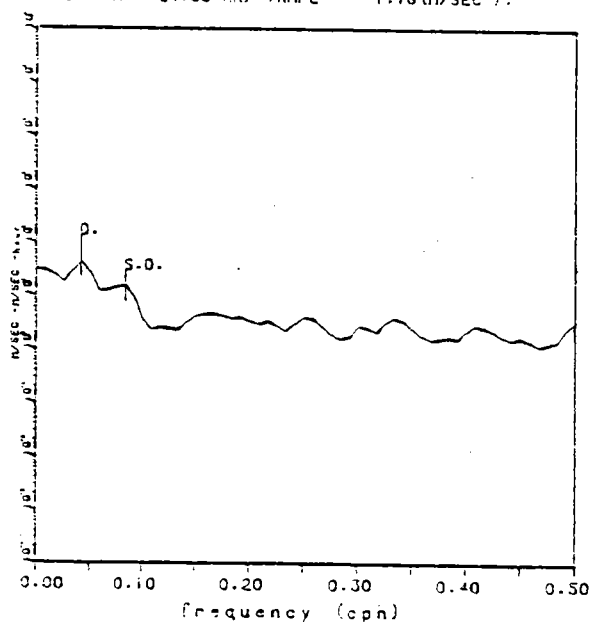
SPTAL DENSITY FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : 9D-02
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 12.20 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 10.34 (CM/SEC).



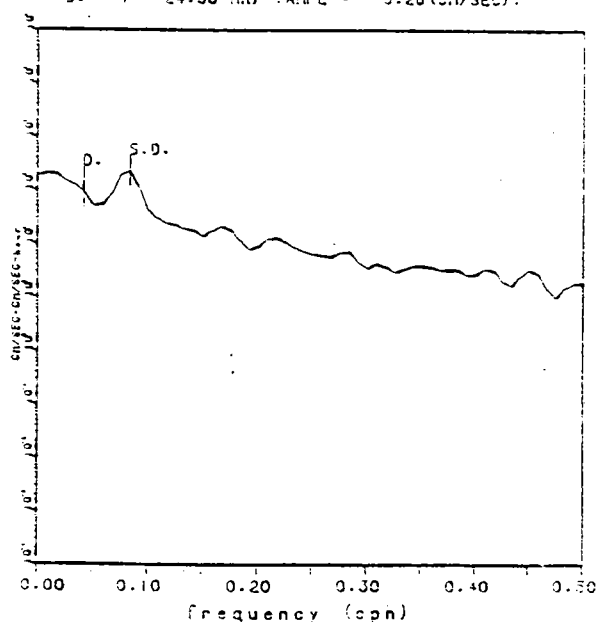
SPTAL DENSITY FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.69 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.16 (M/SEC).



SPTAL DENSITY FUNCTION

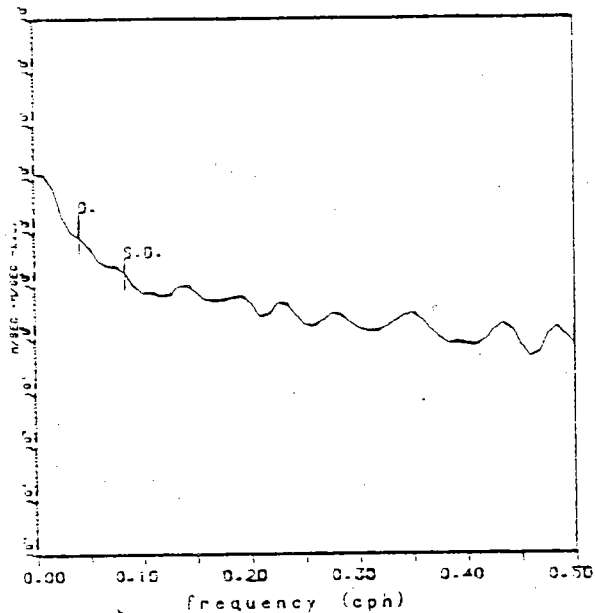
• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : 9D-02
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 9.39 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 5.26 (CM/SEC).



圖IV - 5

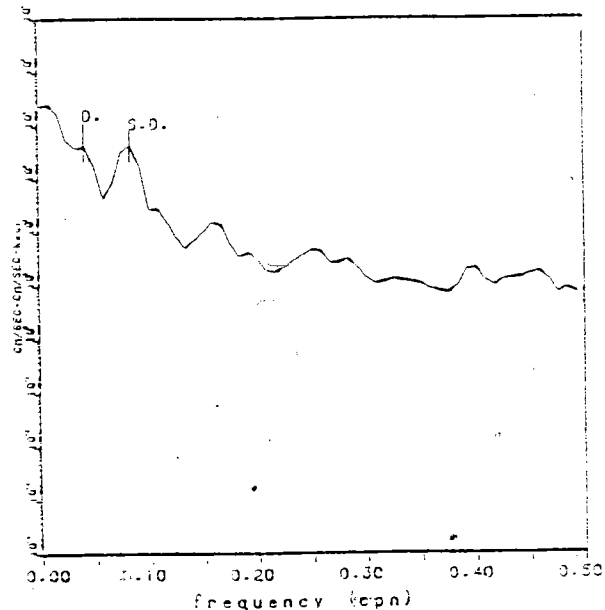
SPIRAL DENSITY FUNCTION

- DATE : 86/04/04/13: 0-86/04/23/11:0
 - AREA TYPE : TAI-CHUNG HAROUR
 - STATION : XX
 - DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 0.74 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 1.58 (M/SEC)



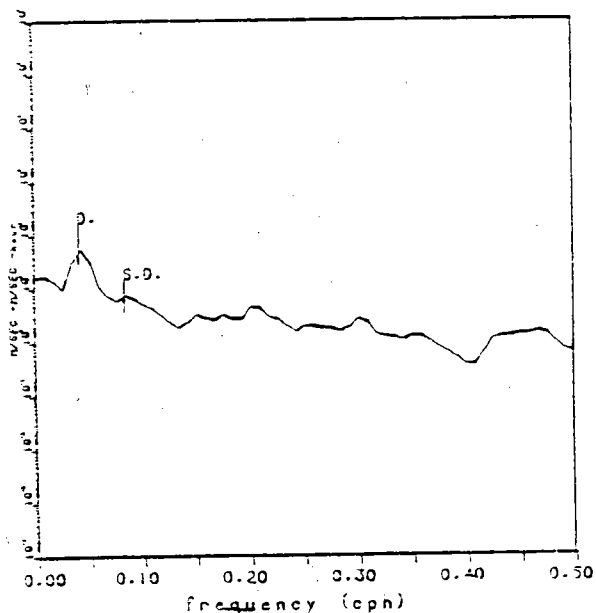
SPIRAL DENSITY FUNCTION

- DATE : 86/04/04/13: 0-86/04/23/11:0
 - AREA TYPE : TAI-CHUNG HAROUR
 - STATION : BD-03
 - DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 11.74 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 11.34 (CM/SEC)



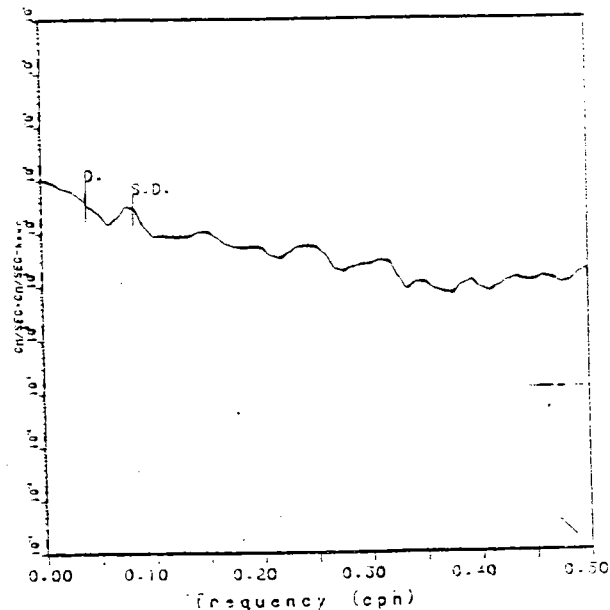
SPIRAL DENSITY FUNCTION

- DATE : 86/04/04/13: 0-86/04/23/11:0
 - AREA TYPE : TAI-CHUNG HAROUR
 - STATION : XX
 - DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 0.49 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 1.32 (M/SEC)



SPIRAL DENSITY FUNCTION

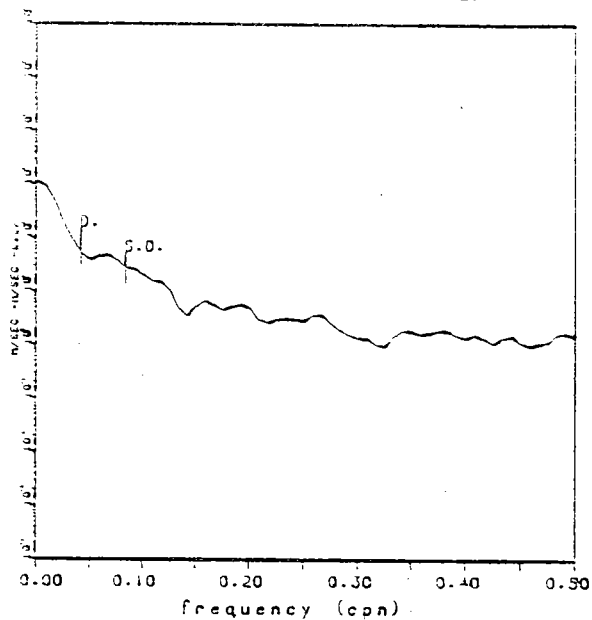
- DATE : 86/04/04/13: 0-86/04/23/11:0
 - AREA TYPE : TAI-CHUNG HAROUR
 - STATION : BD-03
 - DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 2.98 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 3.13 (CM/SEC)



圖IV - 6

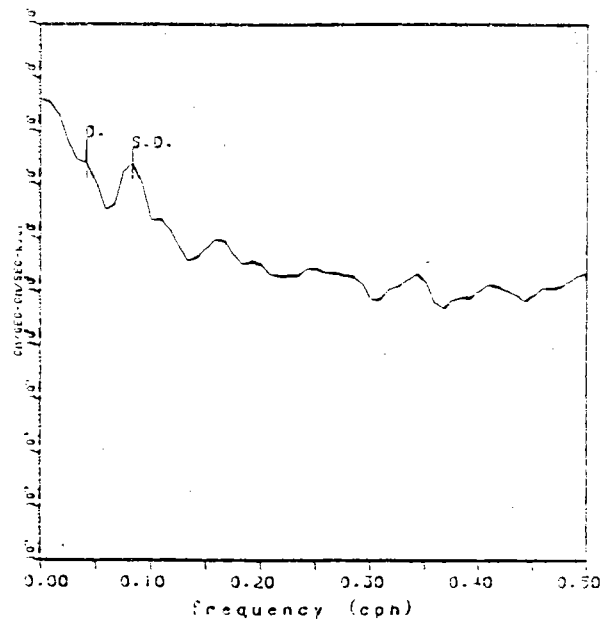
SPTAL DENSITY FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.93 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.26 (M/SEC)



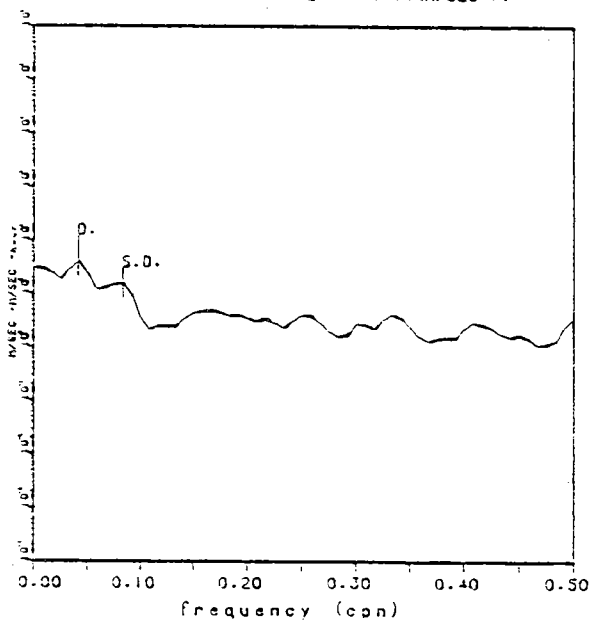
SPTAL DENSITY FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : D -02
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 3.31 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 3.81 (CM/SEC)



SPTAL DENSITY FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.70 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.14 (M/SEC)



SPTAL DENSITY FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : D -02
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 2.85 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 2.96 (CM/SEC)

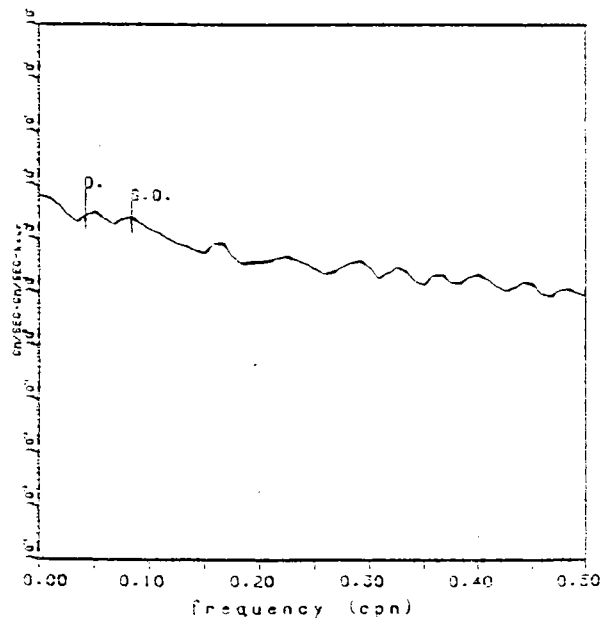
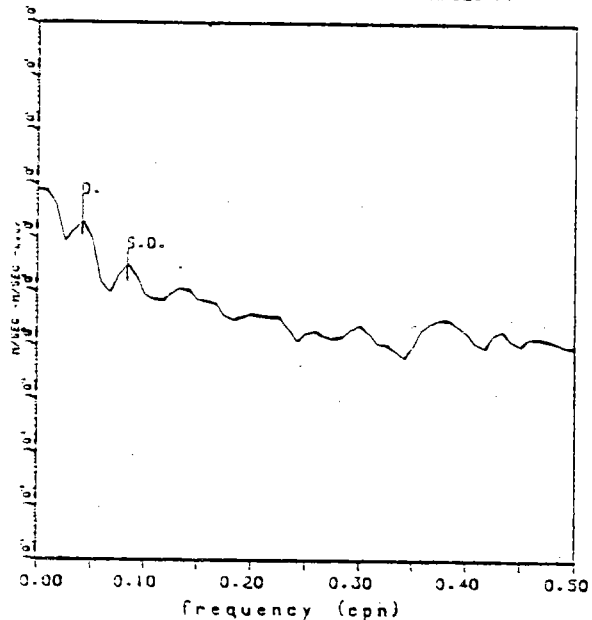


圖 IV - 7

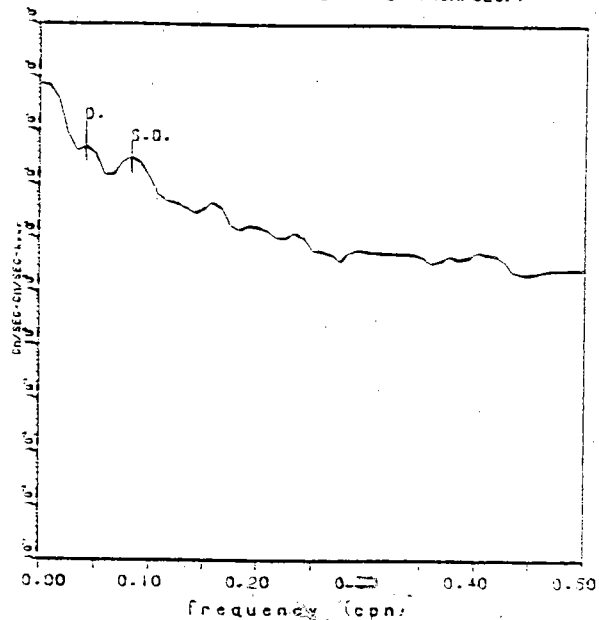
SPTAL DENSITY FUNCTION

• DATE : 85/12/27/13: 0-86/01/18/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.99(M/SEC)
 D. (T = 24.00 HR) .AMPL = 2.51(M/SEC).



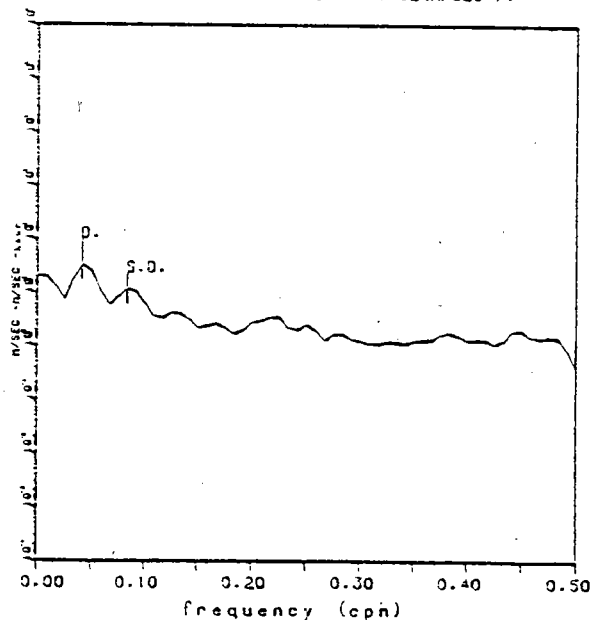
SPTAL DENSITY FUNCTION

• DATE : 85/12/27/13: 0-86/01/18/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : E-01
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 10.13(CM/SEC)
 D. (T = 24.00 HR) .AMPL = 12.71(CM/SEC).



SPTAL DENSITY FUNCTION

• DATE : 85/12/27/13: 0-86/01/18/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.61(M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.02(M/SEC).



SPTAL DENSITY FUNCTION

• DATE : 85/12/27/13: 0-86/01/18/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : E-01
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 9.04(CM/SEC)
 D. (T = 24.00 HR) .AMPL = 4.65(CM/SEC).

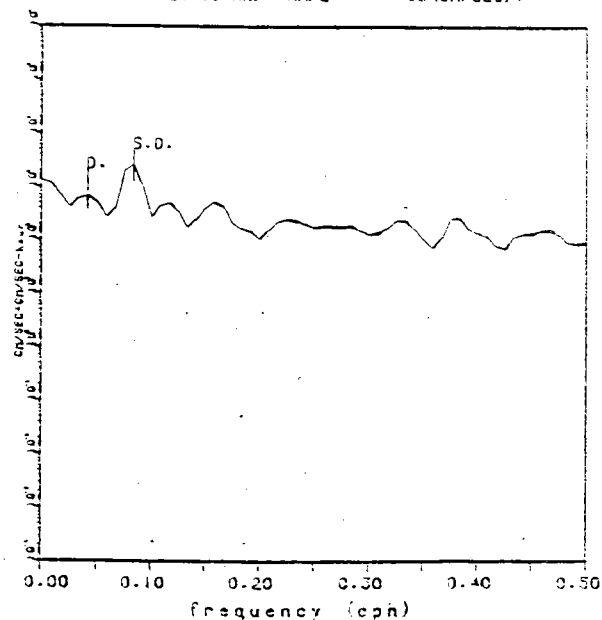
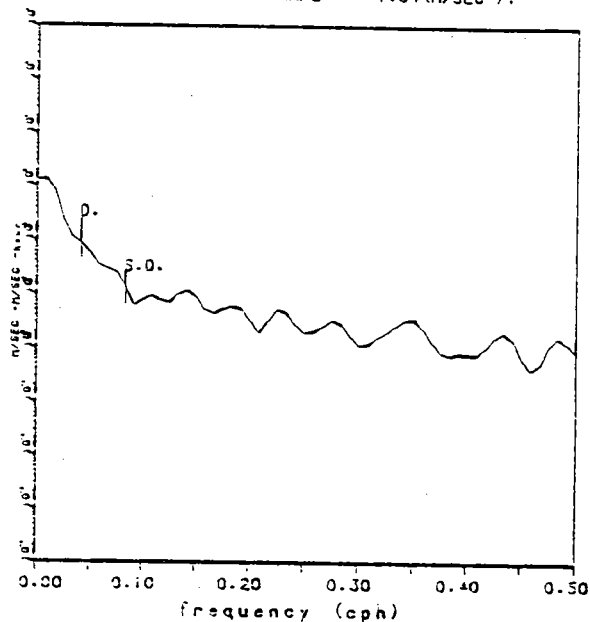


圖 IV - 8

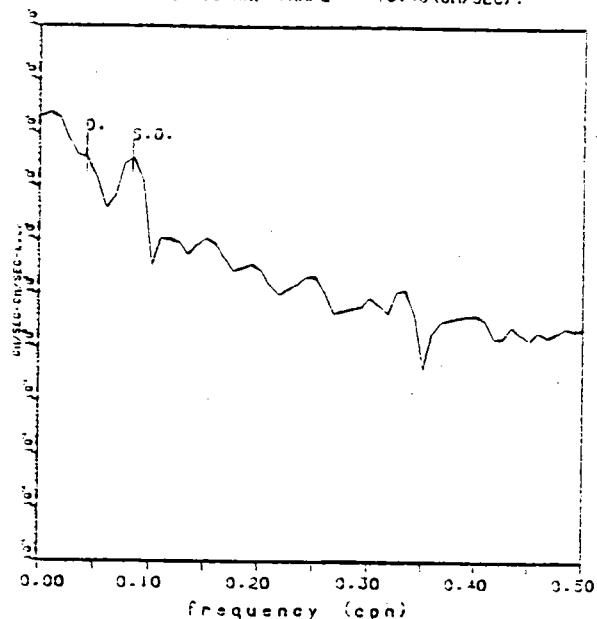
SPTAL DENSITY FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.64 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.54 (M/SEC) .



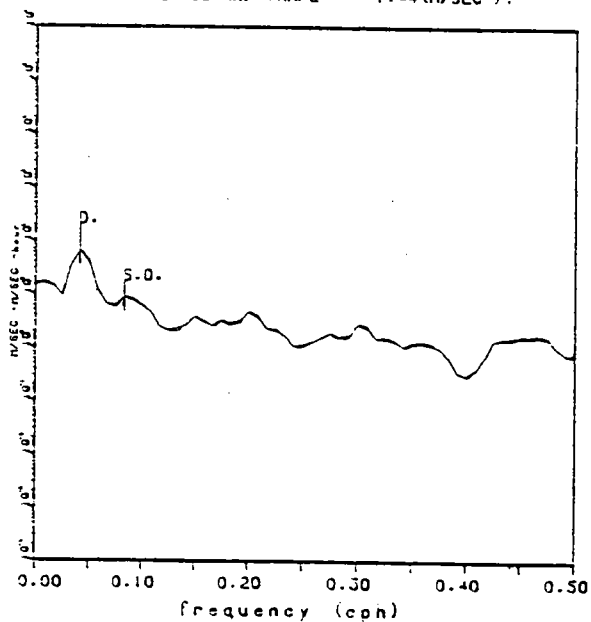
SPTAL DENSITY FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : S -01
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) .AMPL = 10.93 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 10.48 (CM/SEC) .



SPTAL DENSITY FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 0.53 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.44 (M/SEC) .



SPTAL DENSITY FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : S -01
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) .AMPL = 1.31 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 1.18 (CM/SEC) .

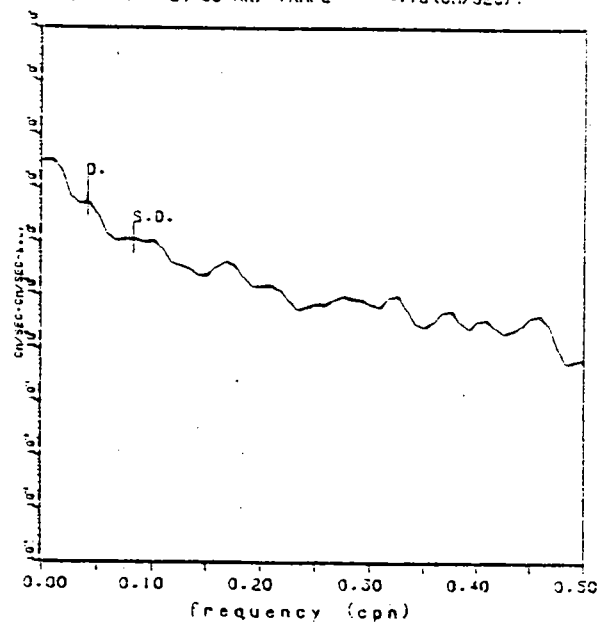
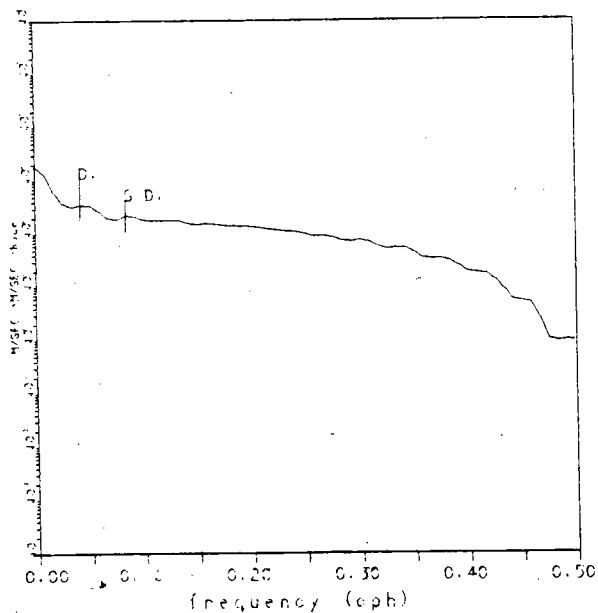


圖 IV - 9

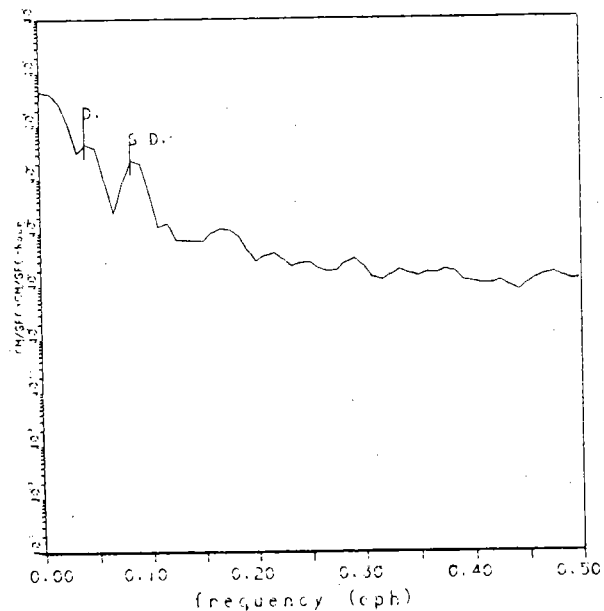
SPTAL DENSITY FUNCTION

* DATE : 66/12/19/11: 0-67/ 1/ 6/ 2:
 * AREA TYPE : TAI-CHUNG HAROUR
 * STATION : XX
 * DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 1.33 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 1.67 (M/SEC)



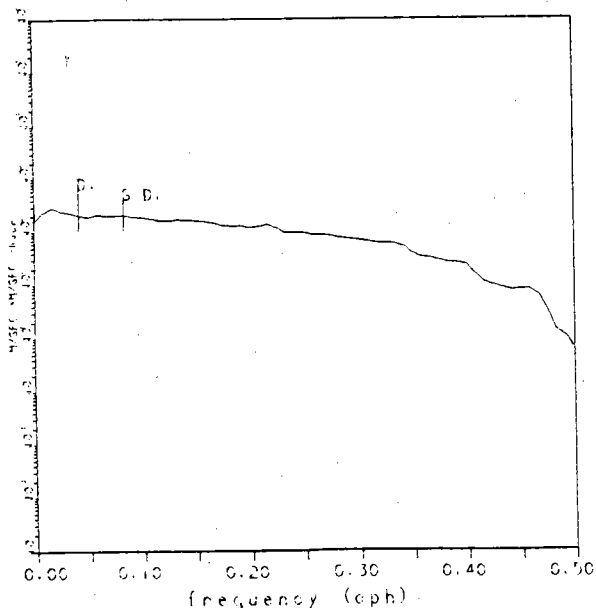
SPTAL DENSITY FUNCTION

* DATE : 66/12/19/11: 0-67/ 1/ 6/ 2:
 * AREA TYPE : TAI-CHUNG HAROUR
 * STATION : BU
 * DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 4.33 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 6.03 (CM/SEC)



SPTAL DENSITY FUNCTION

* DATE : 66/12/19/11: 0-67/ 1/ 6/ 2:
 * AREA TYPE : TAI-CHUNG HAROUR
 * STATION : XX
 * DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 1.29 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 1.29 (M/SEC)



SPTAL DENSITY FUNCTION

* DATE : 66/12/19/11: 0-67/ 1/ 6/ 2:
 * AREA TYPE : TAI-CHUNG HAROUR
 * STATION : BU
 * DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 2.44 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 1.40 (CM/SEC)

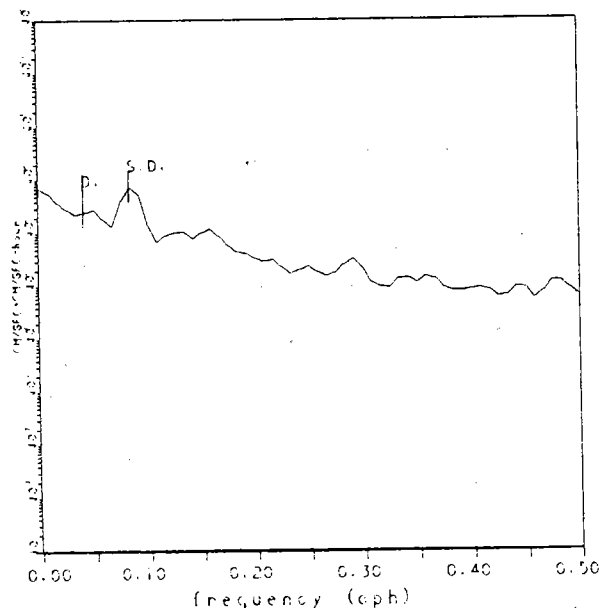
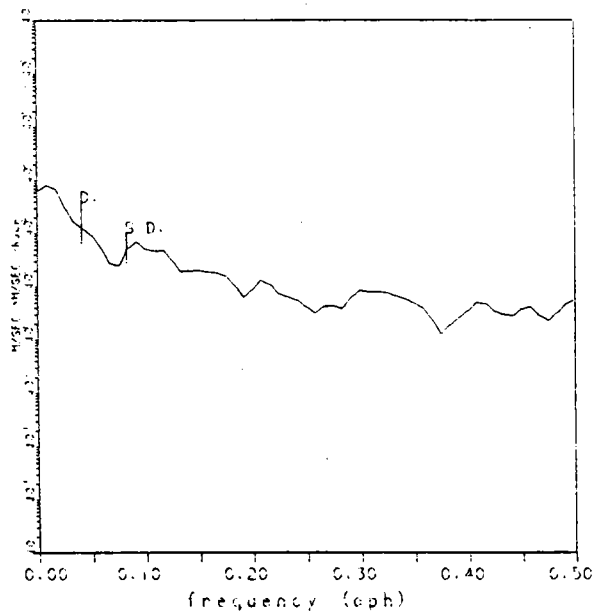


圖 IV - 10

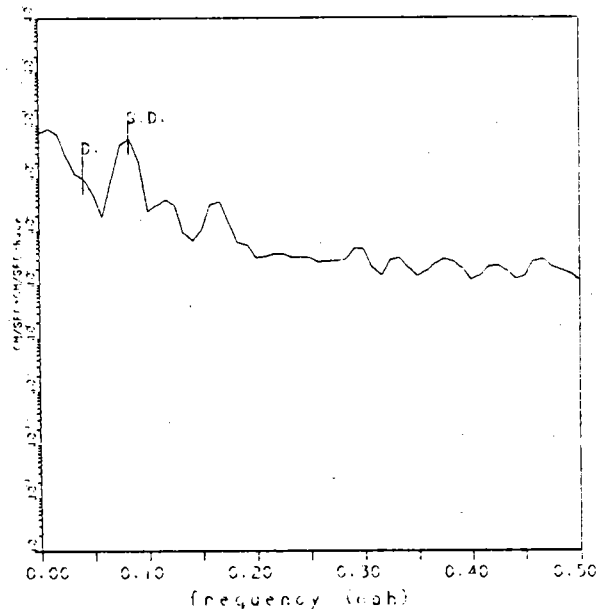
SPTAL DENSITY FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 0.64 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 1.00 (M/SEC)



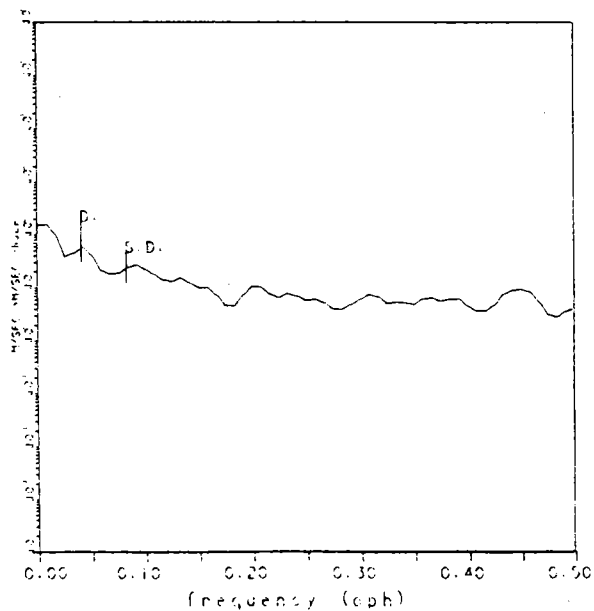
SPTAL DENSITY FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : C-
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 6.75 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 2.77 (CM/SEC)



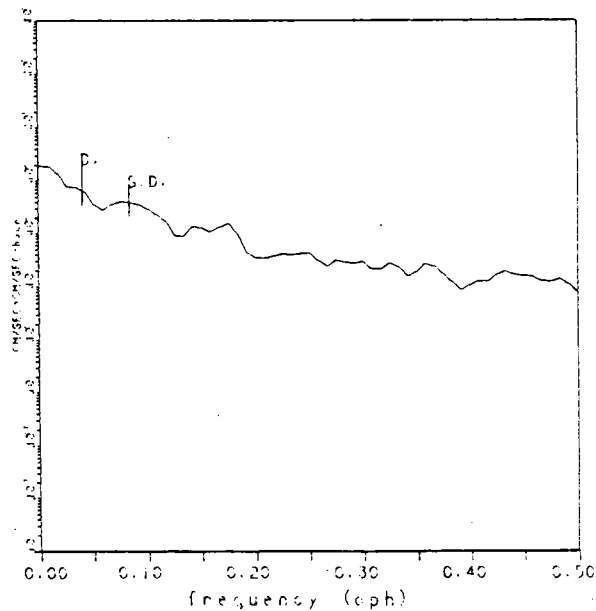
SPTAL DENSITY FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 0.43 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 0.56 (M/SEC)



SPTAL DENSITY FUNCTION

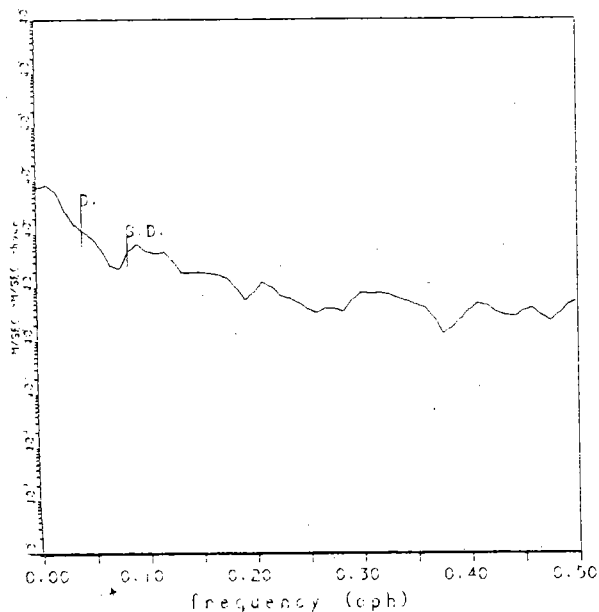
• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : C-
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 1.76 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 2.26 (CM/SEC)



圖IV - 11

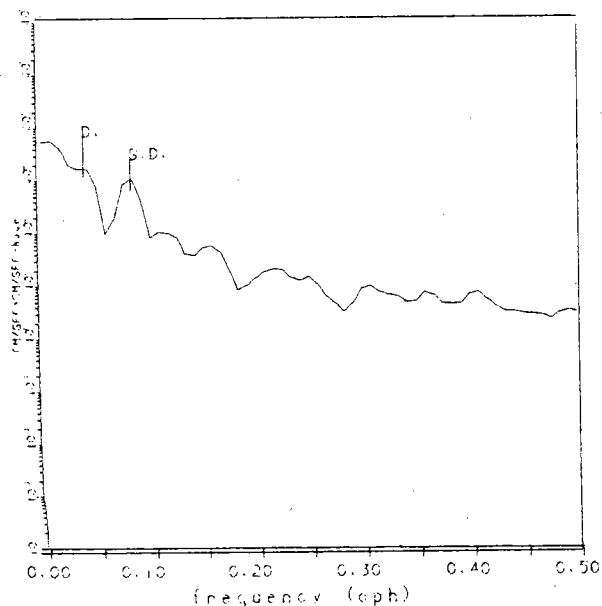
SPTAL DENSITY FUNCTION

• DATE : 67/03/05/12: 0-67/03/24/03:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND ALONG-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 0.62 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 0.96 (M/SEC)



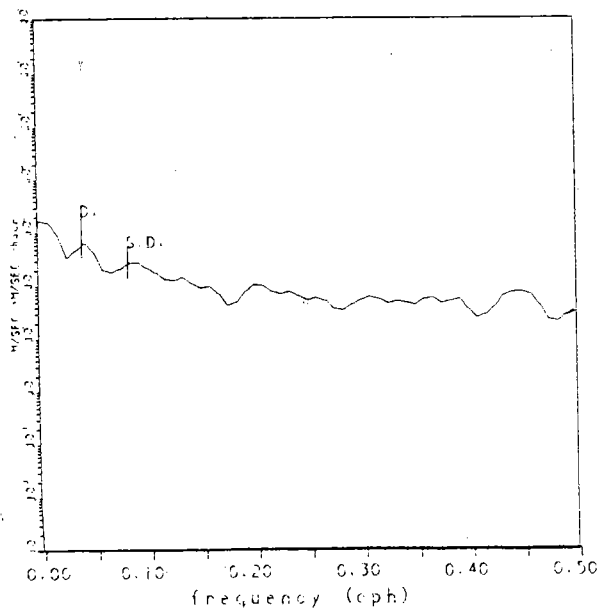
SPTAL DENSITY FUNCTION

• DATE : 67/03/05/12: 0-67/03/24/03:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : H-
 • DATA NAME : CURRENT ALONG-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 3.34 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 4.06 (CM/SEC)



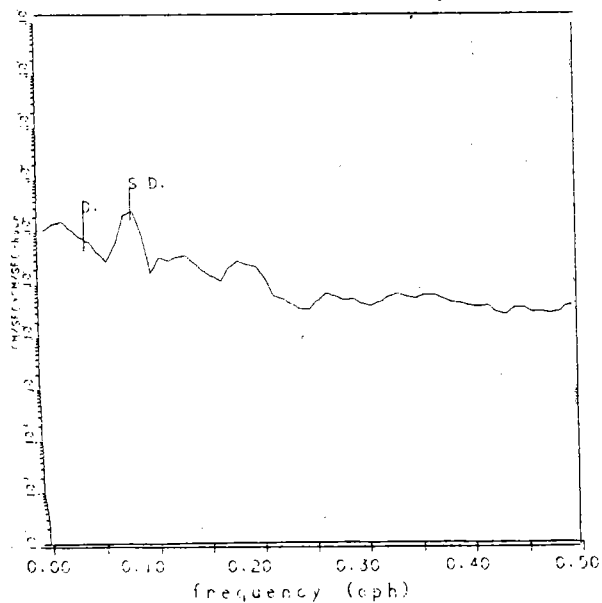
SPTAL DENSITY FUNCTION

• DATE : 67/03/05/12: 0-67/03/24/03:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND CROSS-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 0.47 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 0.72 (M/SEC)



SPTAL DENSITY FUNCTION

• DATE : 67/03/05/12: 0-67/03/24/03:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : H-
 • DATA NAME : CURRENT CROSS-SHORE
 S.D. (T = 12.00 HR) ,AMPL = 1.54 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 0.76 (CM/SEC)



圖IV - 12

附 圖 V

流速及相對應時間風速向量進行圖

圖 號	時 間	測 站	備 註
V - 1	86/01/16-01/29	BU	
V - 2	86/01/16-01/29	BD	與V-1風速相同
V - 3	86/02/03-02/25	BU	
V - 4	86/02/03-02/25	BD	與V-3風速相同
V - 5	86/03/07-04/03	BD	(a) 爲流速 (b) 爲風速
V - 6	86/04/04-04/23	BD	
V - 7	86/03/08-04/03	D	
V - 8	85/12/27-86/01/18	E	
V - 9	86/04/08-04/23	S	
V - 10	86/12/19-87/01/06	BU	
V - 11	87/03/06-87/03/24	G	
V - 12	87/03/05-87/03/24	H	

P.V.D DIAGRAM OF CURRENT

* IN/OUT TM.: 86/01/16/15: 0-86/01/29/19:00

* AREA : TAI-CHUNG HARBOUR

* STATION : BU-01

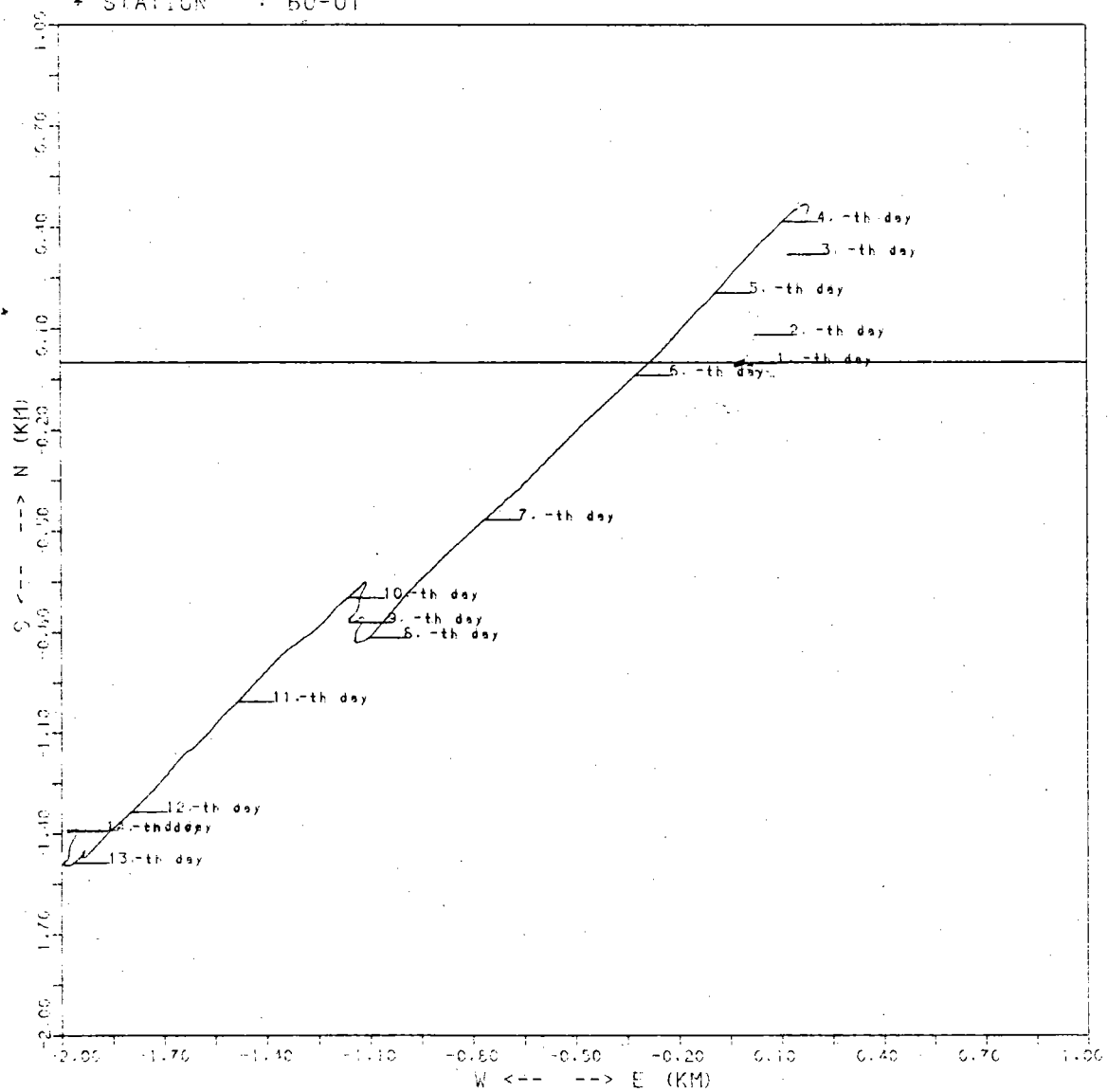


圖 V - 1 (a)

P.V.D DIAGRAM OF WIND
 * DURATION : 86/ 1/16/15: 0-86/ 1/29/19: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

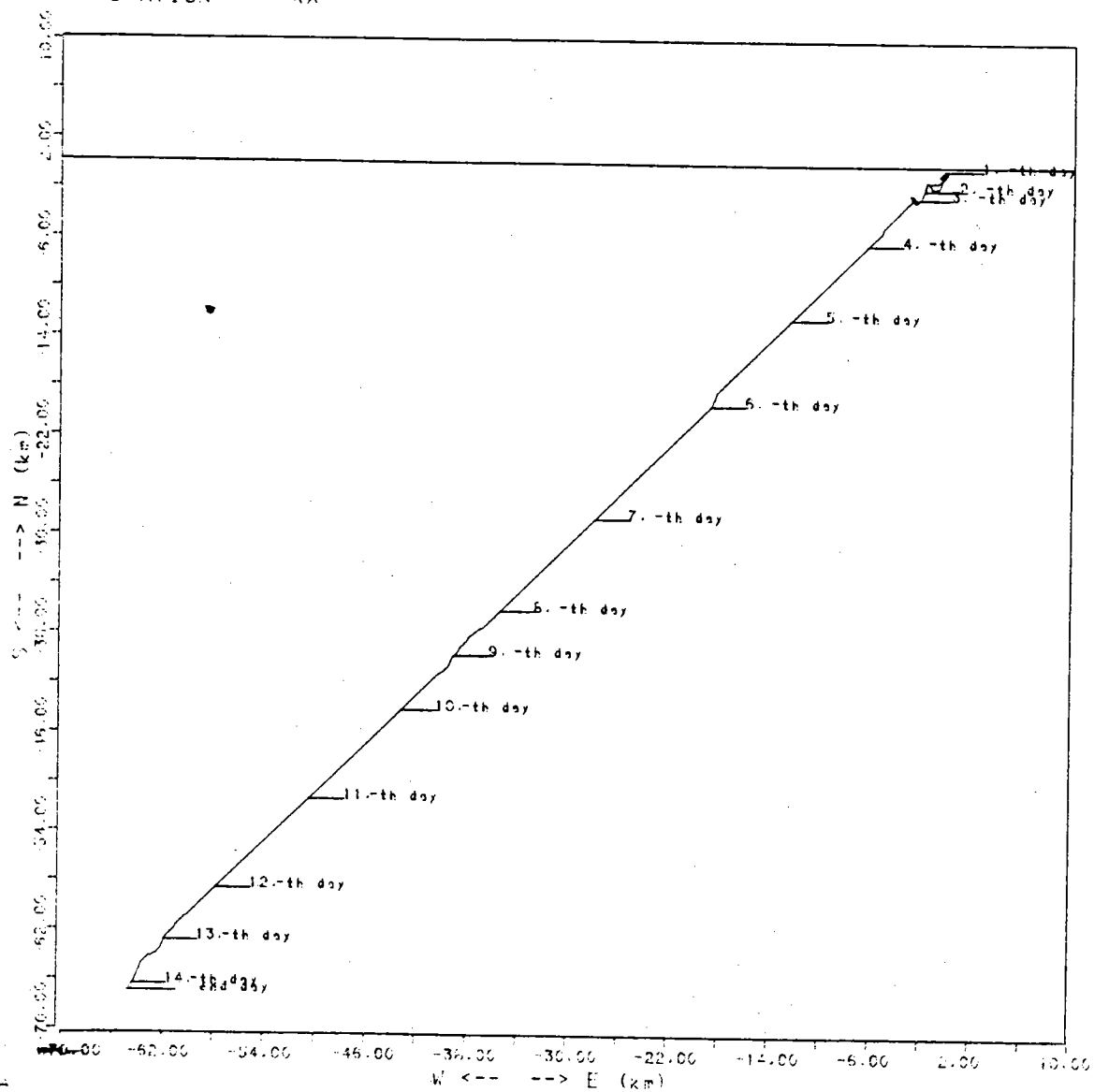


圖 V - 1 (b)

P.V.D DIAGRAM OF CURRENT

* IN/OUT TM. : 86/01/16/15: 0-86/01/29/19:00

* AREA : TAI-CHUNG HAROUR

* STATION : BD-01

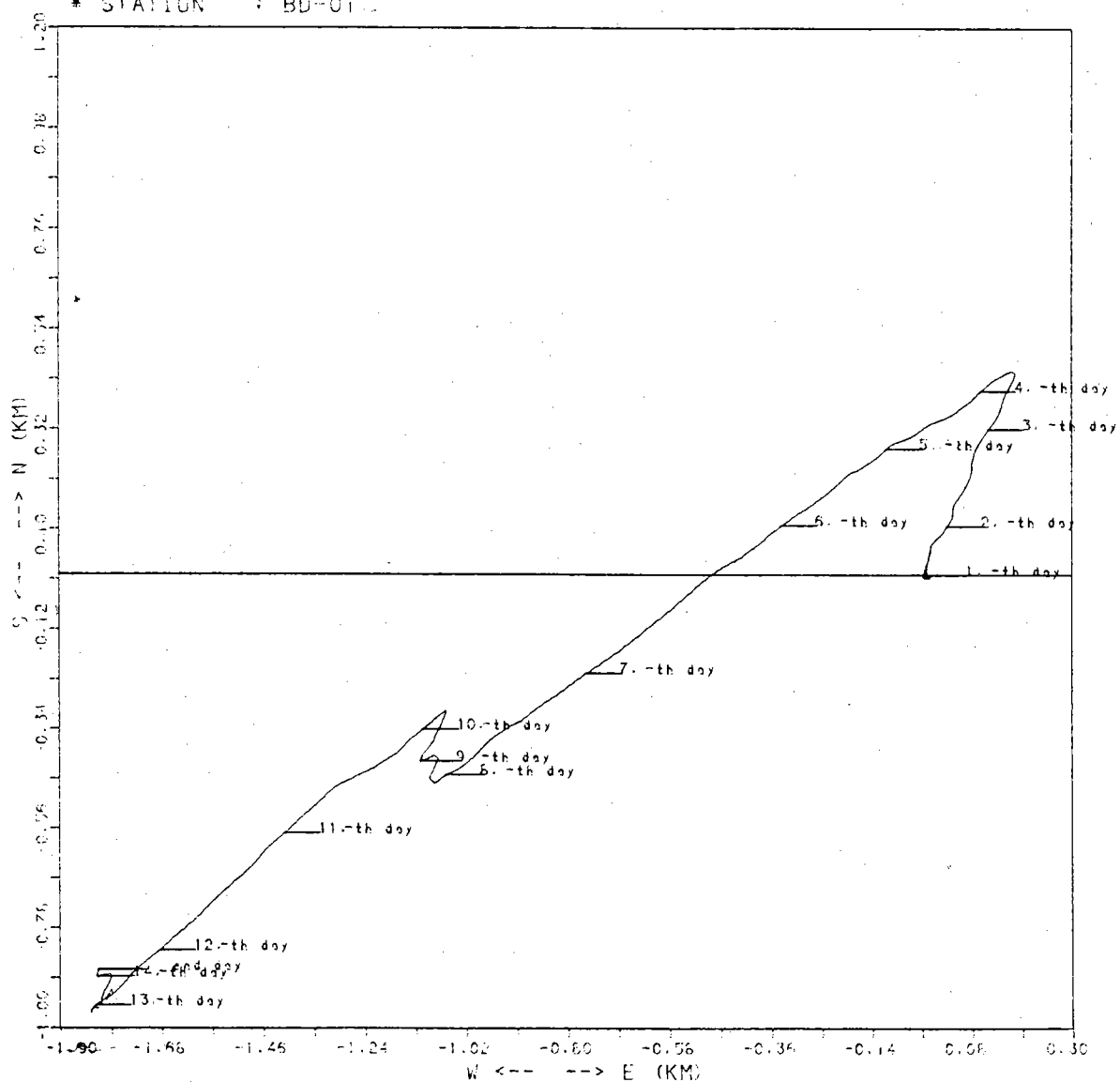


圖 V - 2 (a)

P.V.D DIAGRAM OF CURRENT

* IN/OUT TM.: 86/02/03/09:00-86/02/25/14:00
 * AREA : TAI-CHUNG HARBOUR
 * STATION : BU-01

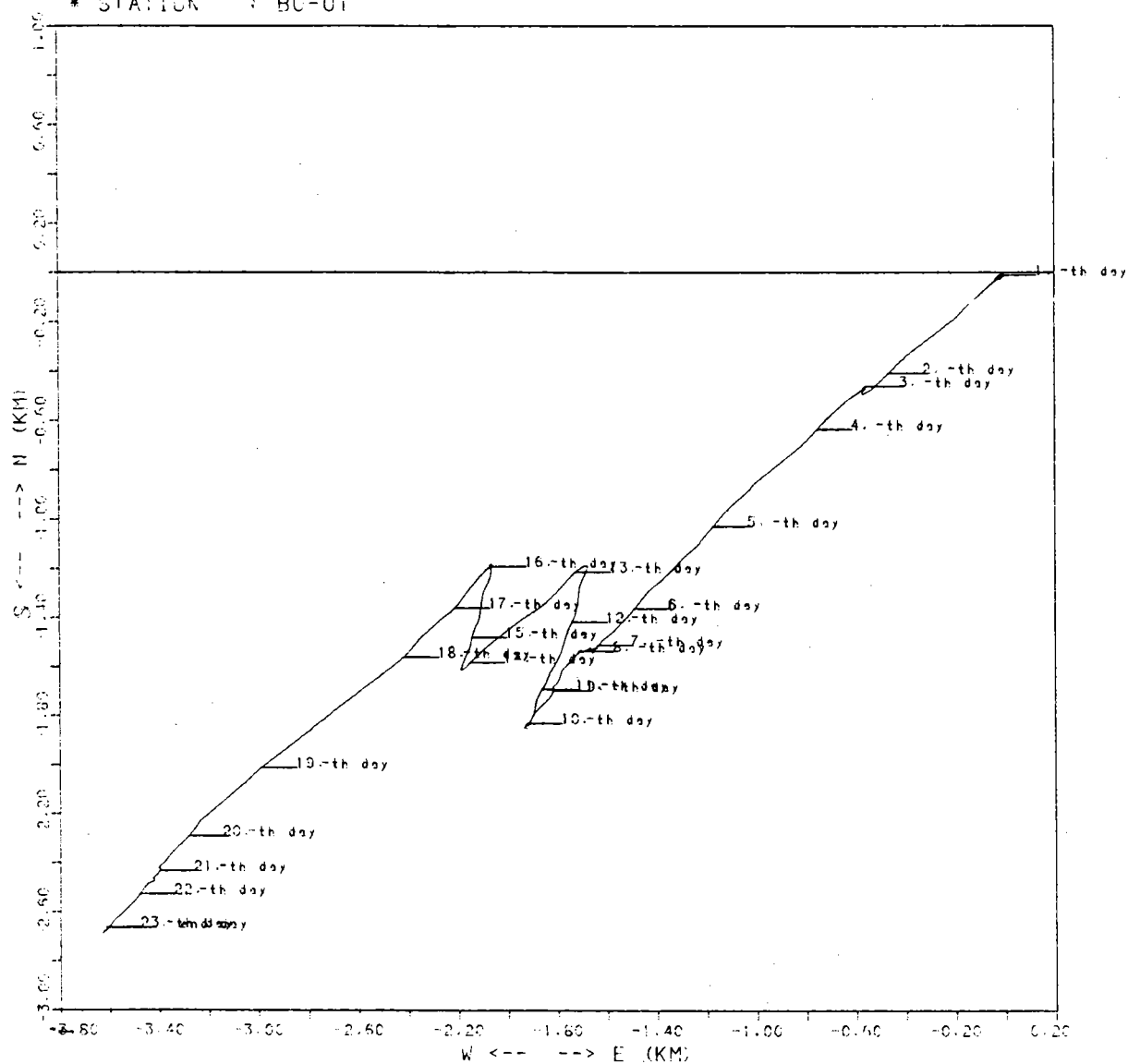


圖 V - 3 (a)

P.V.D DIAGRAM OF WIND
 * DURATION : 86/ 2/03/09:00-86/ 2/25/14: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

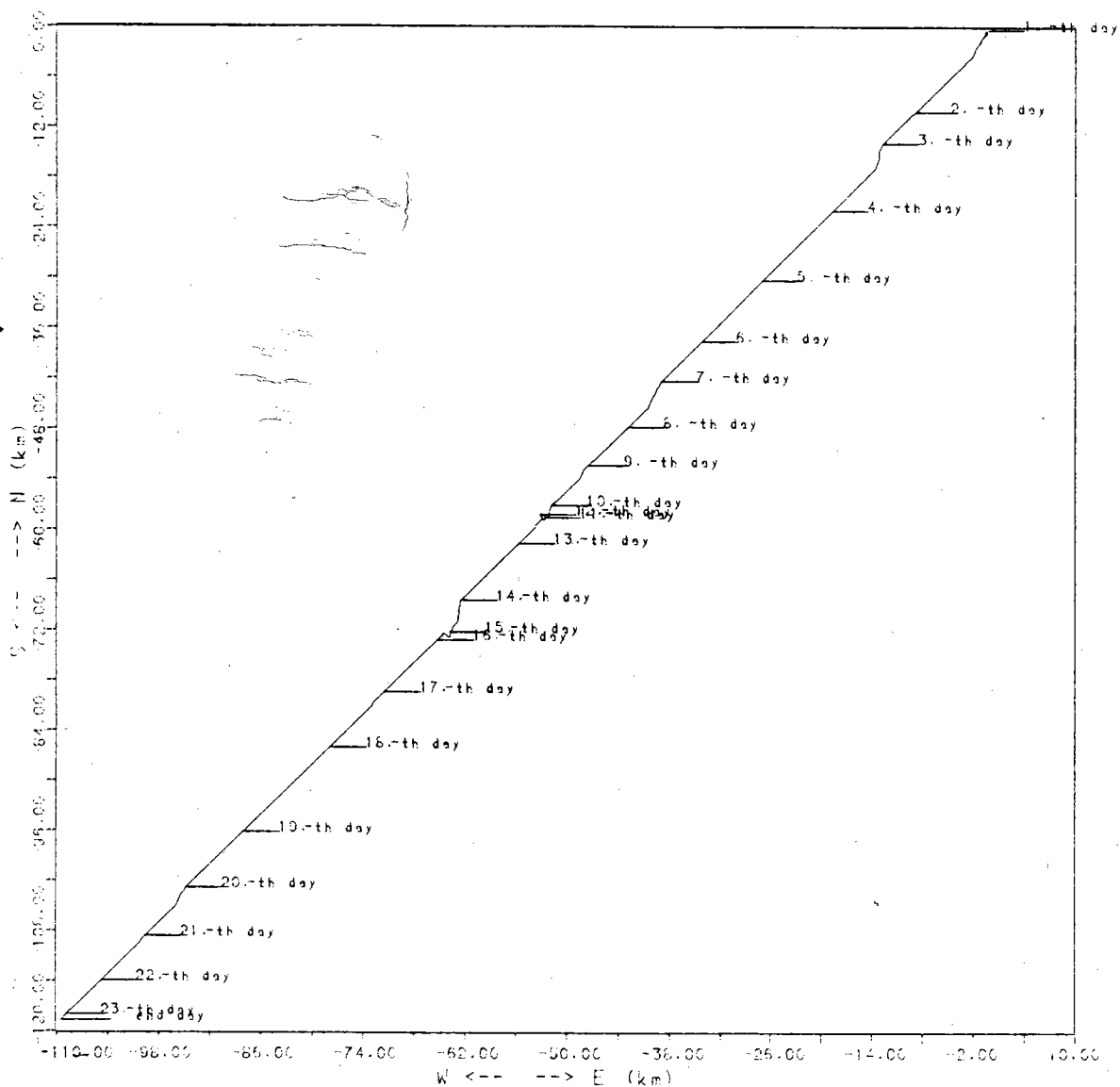


圖 V - 3 (b)

P.V.D DIAGRAM OF CURRENT

* IN/OUT TM.: 86/02/03/09- 8-86/02/25/14:00

* AREA : TAI-CHUNG HAROUR

* STATION : BD-01

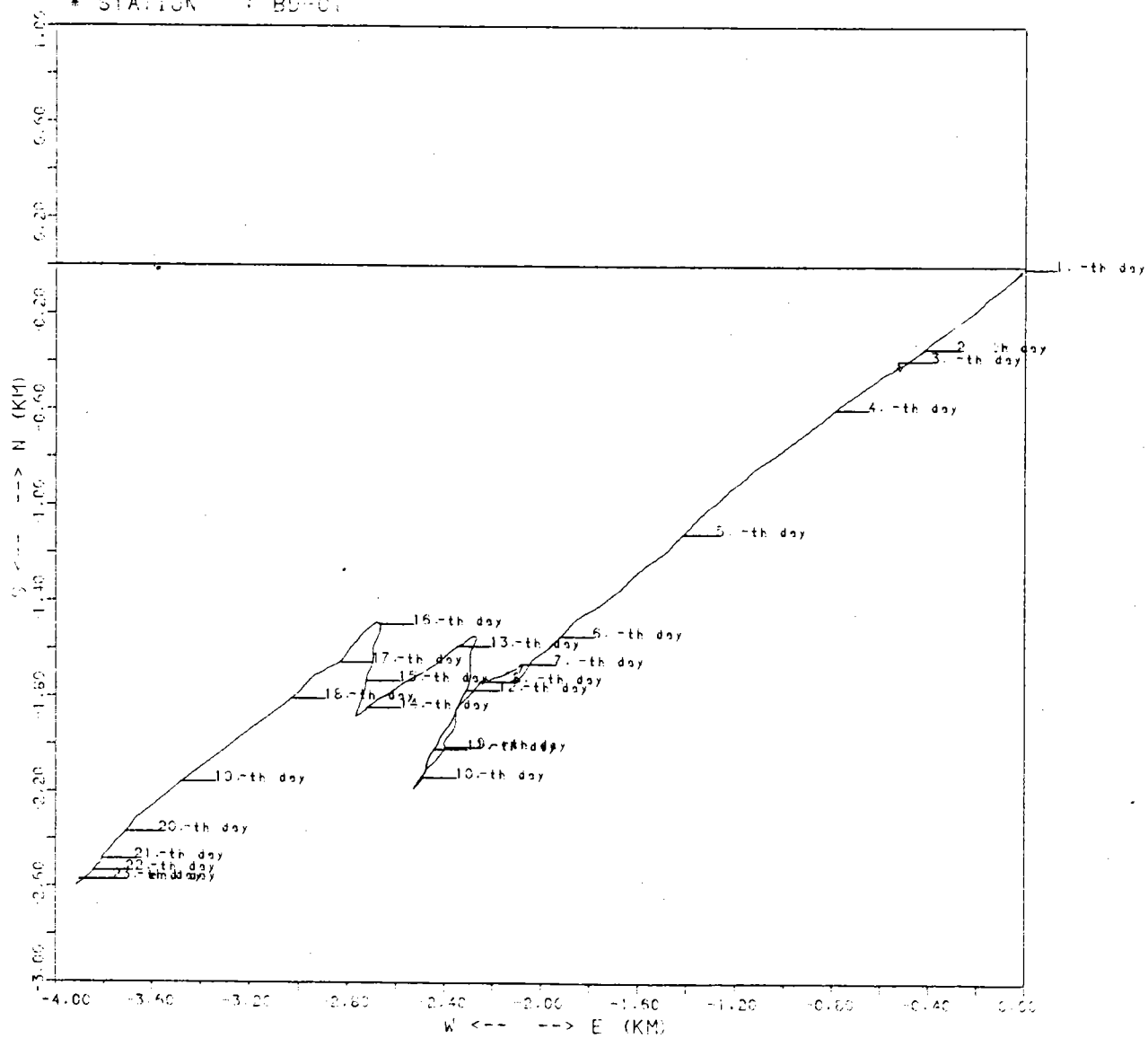


圖 V - 4 (a)

P.V.D DIAGRAM OF CURRENT

- * IN/OUT TM. : 86/03/07/13. 0-86/04/03/13:00
- * AREA : TAI-CHUNG HARBOUR
- * STATION : BD-02

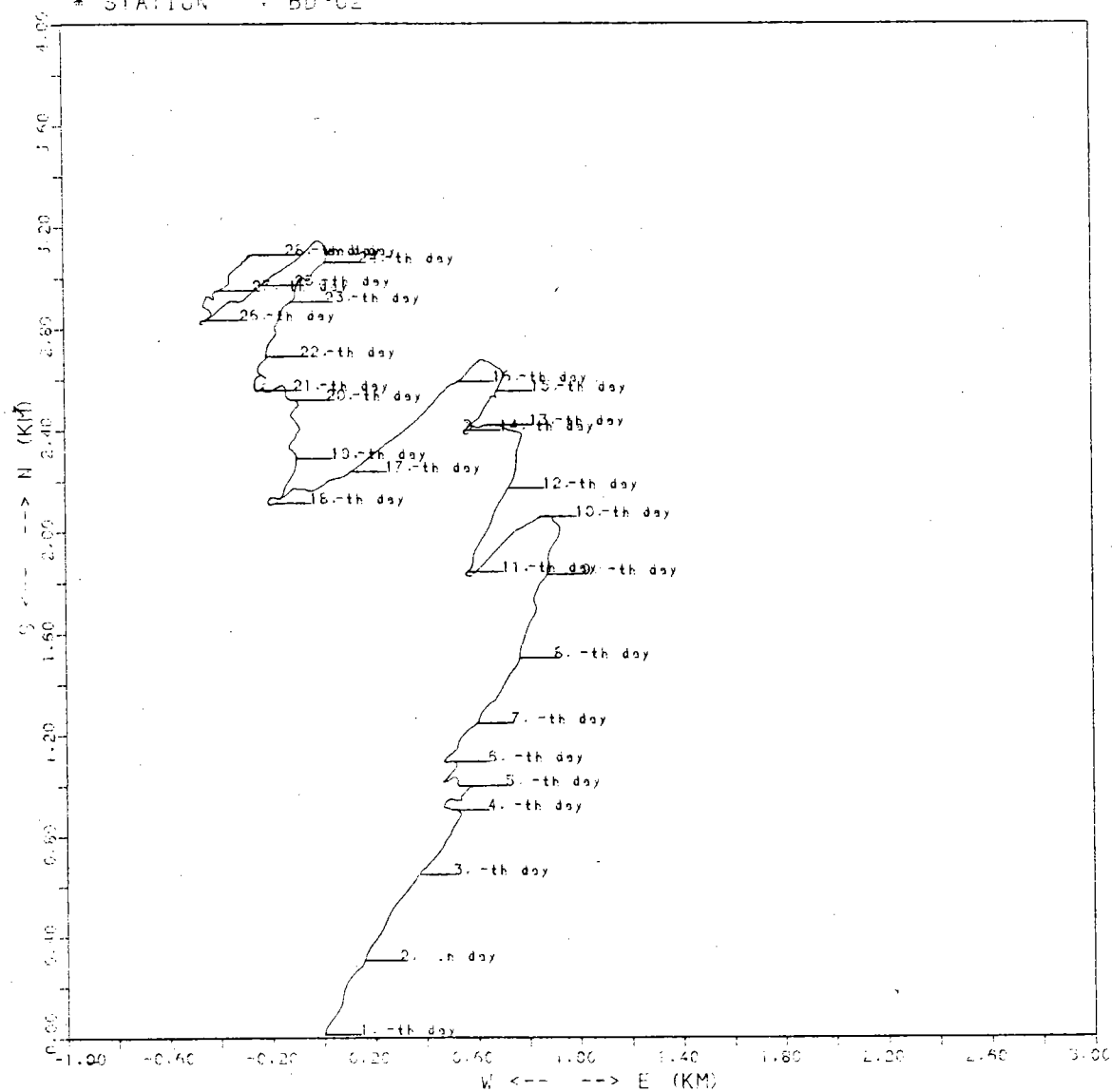


圖 V - 5 (a)

P.V.D DIAGRAM OF WIND
 * DURATION : 86/ 3/ 7/13. 0-86/ 4/ 3/13. 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

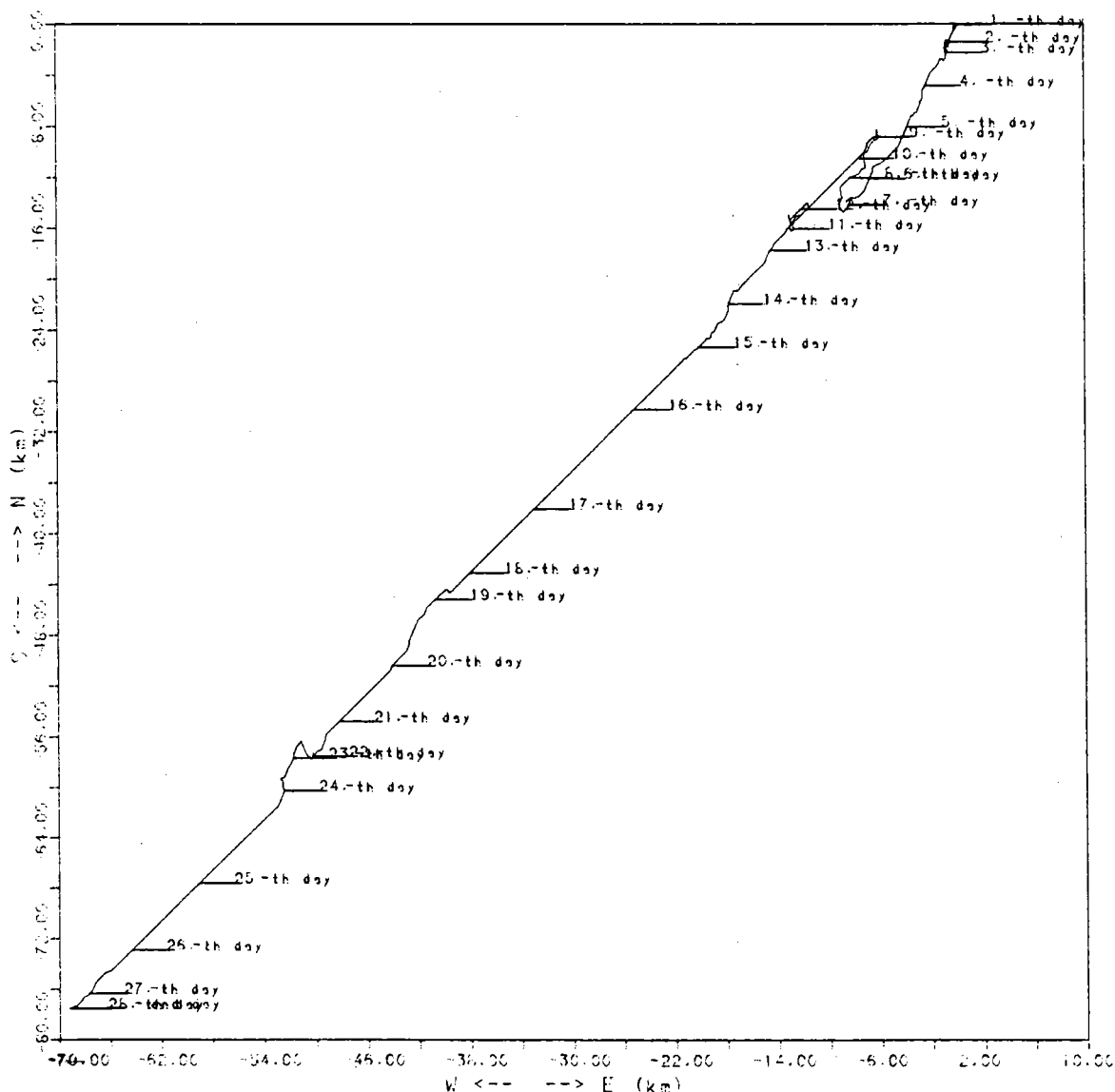


圖 V - 5 (b)

P.V.D DIAGRAM OF CURRENT

- * IN/OUT TM.: 86/04/04/13: 0-86/04/23/11:00
- * AREA : TAI-CHUNG HARBOUR
- * STATION : BD-03

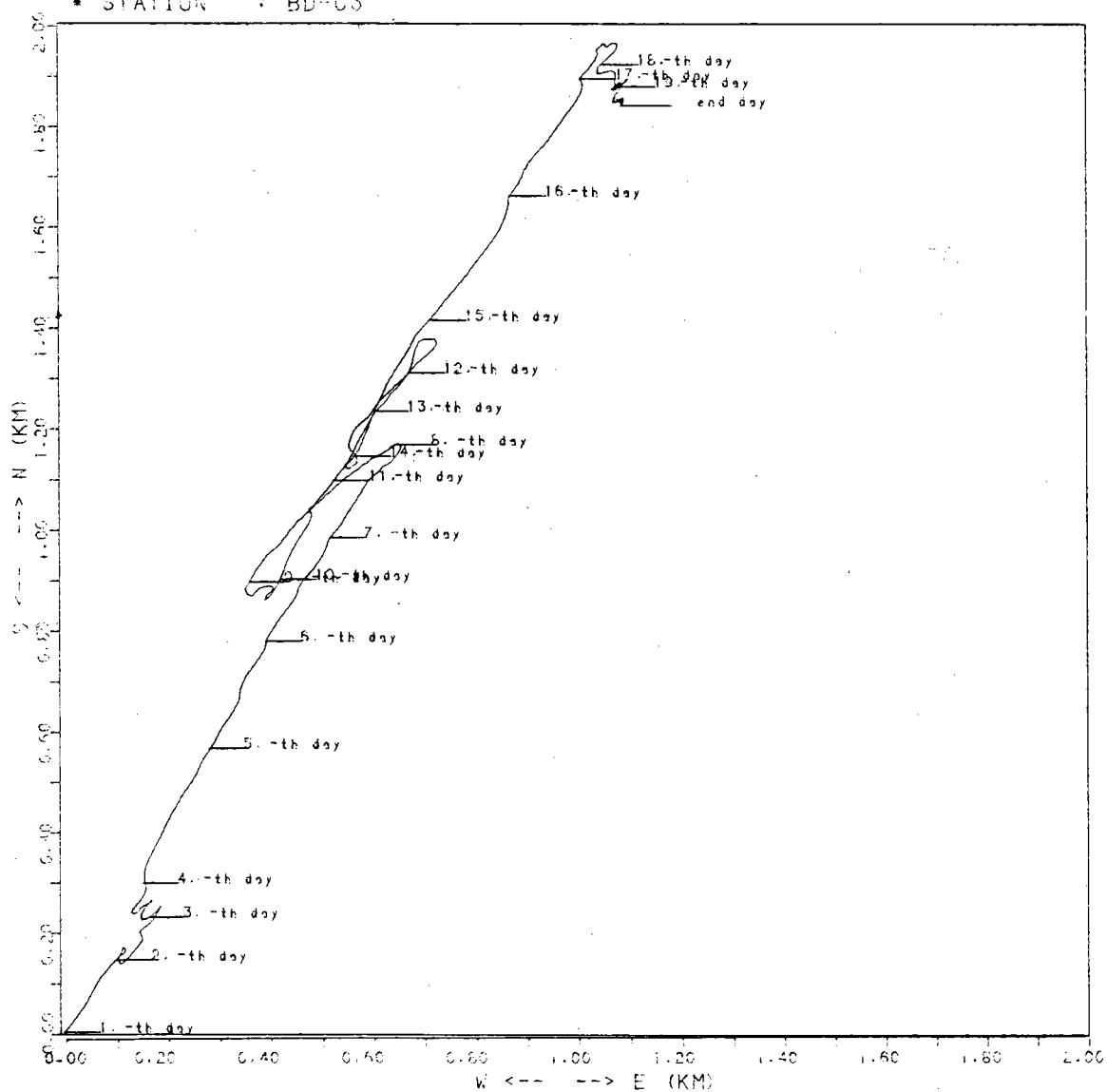


圖 V - 6 (a)

P.V.D DIAGRAM OF WIND

* DURATION : 86/ 4/ 4/13: 0-86/ 4/23/11: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

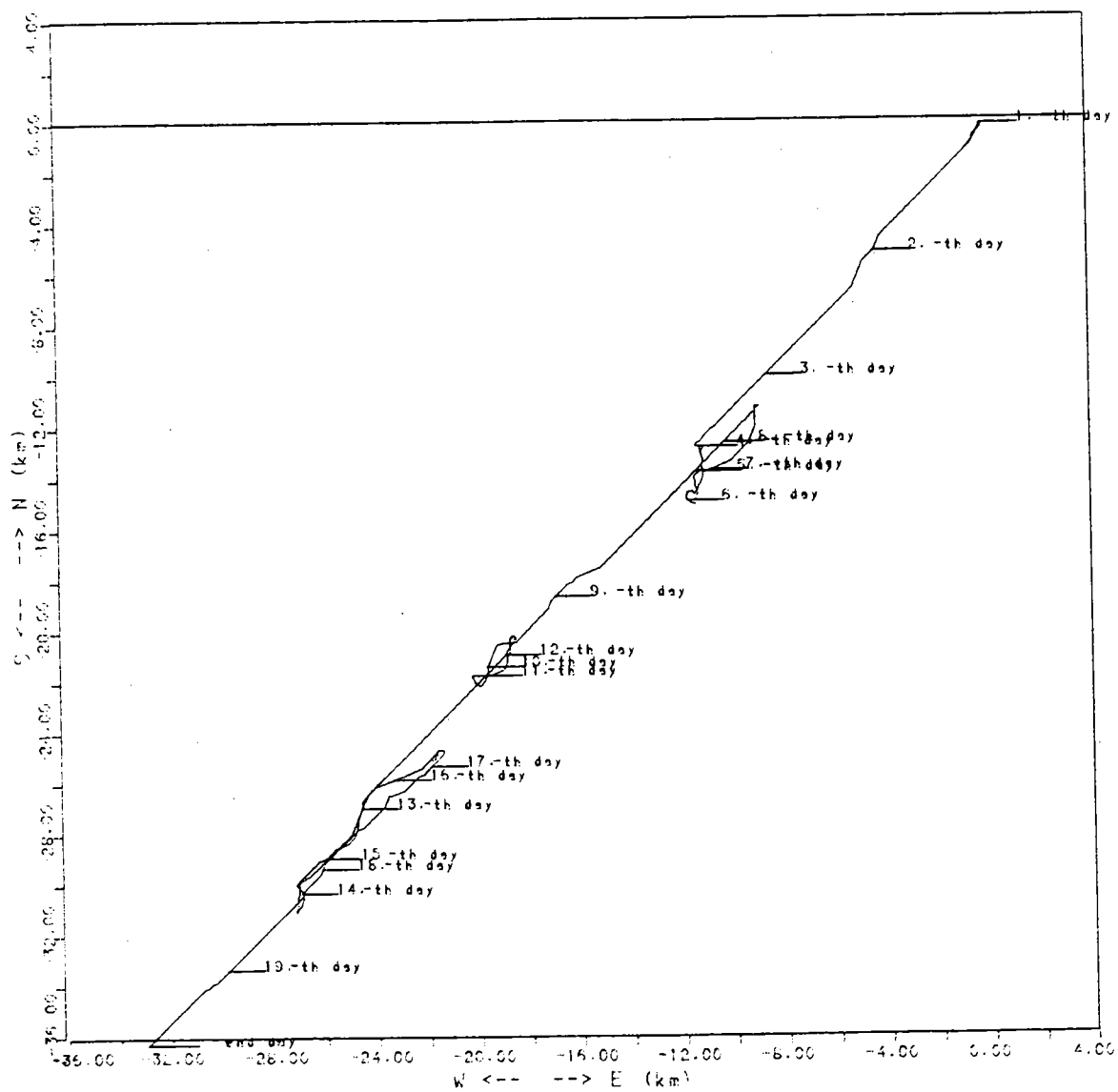


圖 V - 6 (b)

P.V.D DIAGRAM OF CURRENT

* IN/OUT TM.: 86/03/08/10: 0-86/04/03/12:00
 * AREA : TAI-CHUNG HAROUR
 * STATION : D-02

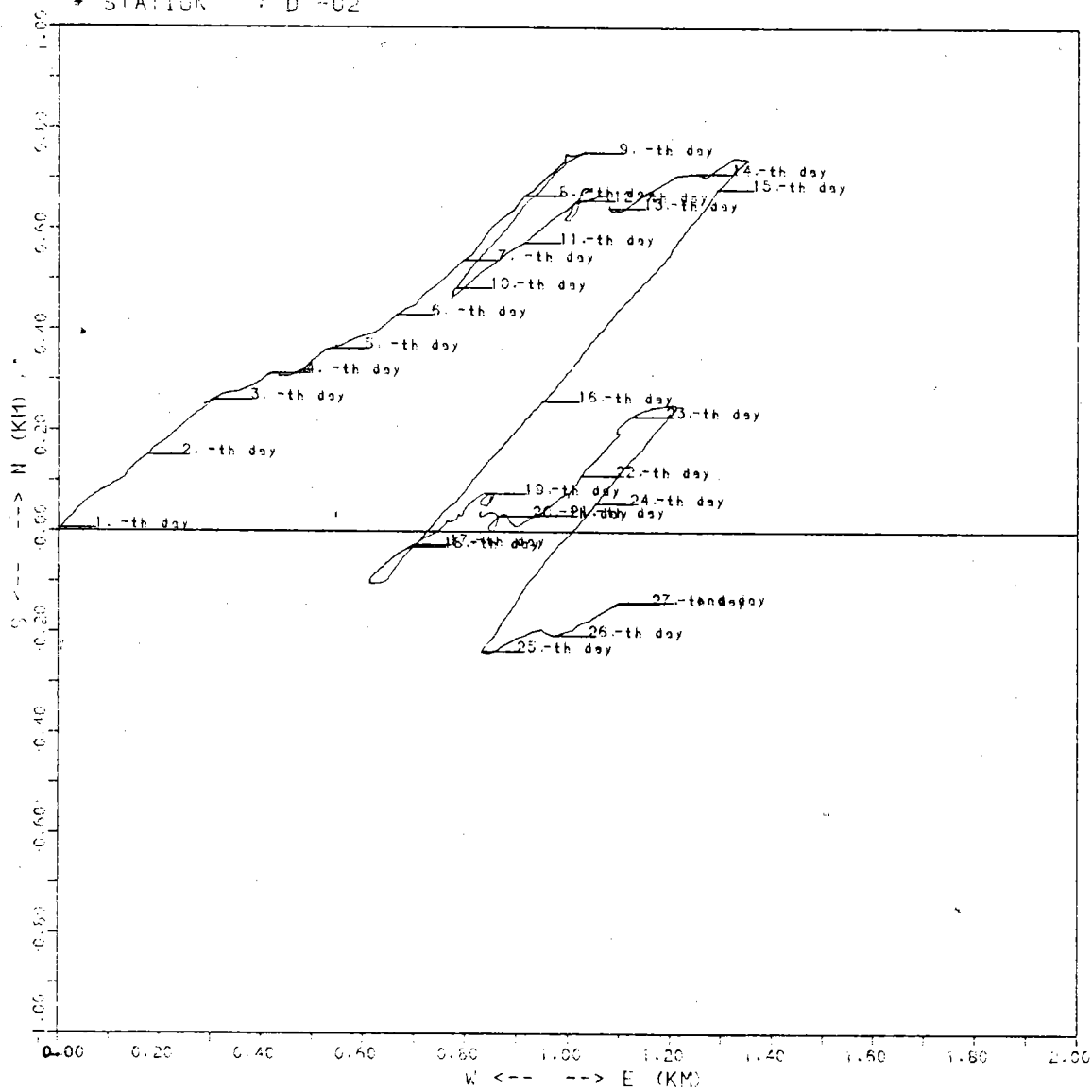


圖 V - 7 (a)

P.V.D DIAGRAM OF WIND
 * DURATION : 86/ 3/ 8/10: 0-86/ 4/ 3/12: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

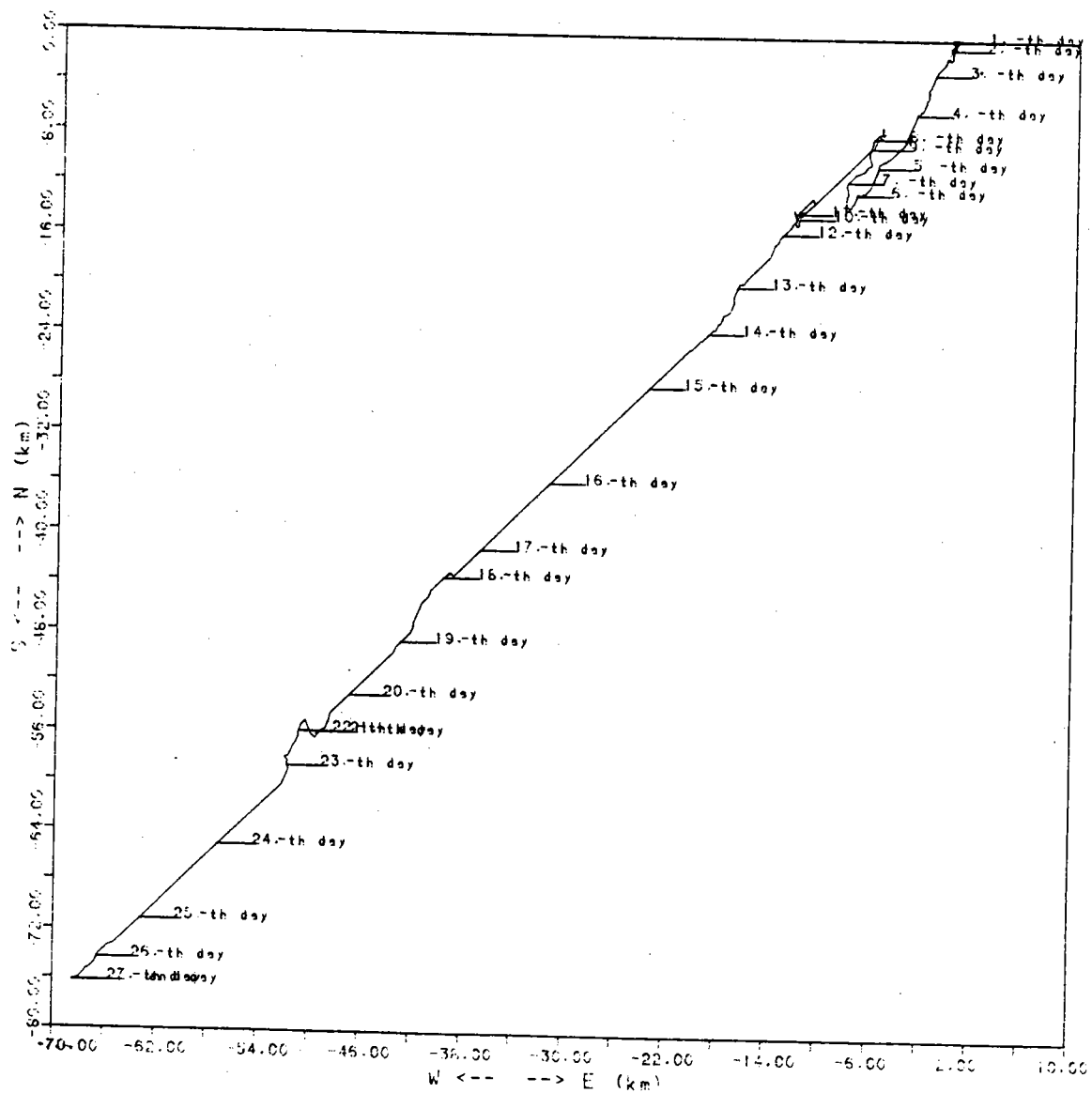


圖 V - 7 (b)

P.V.D DIAGRAM OF CURRENT

* IN/OUT TM.: 85/12/27/13: 0-86/01/18/11:00

* AREA : TAI-CHUNG HAROUR

* STATION : E -01

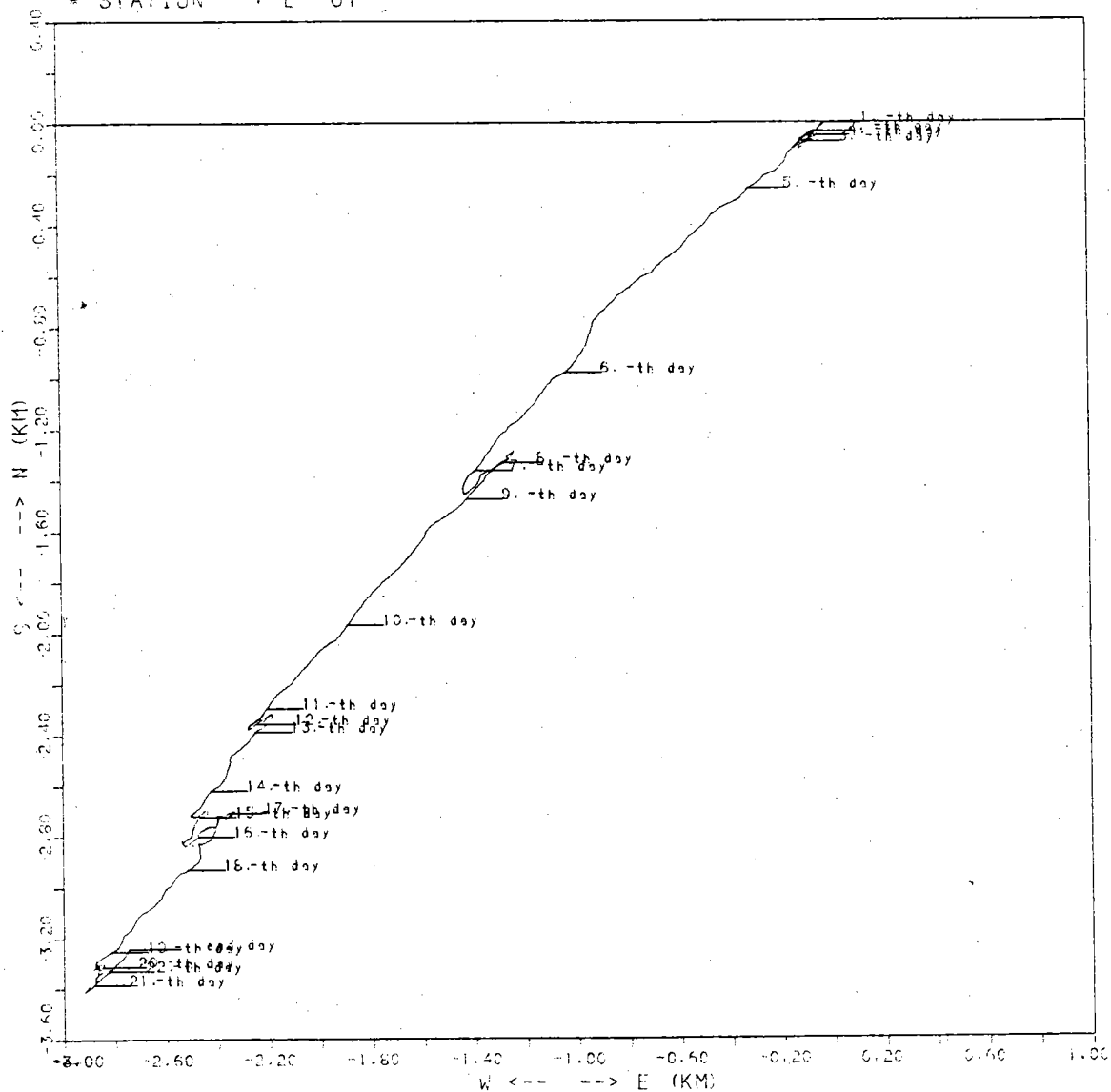


圖 V - 8 (a)

P.V.D DIAGRAM OF WIND
 * DURATION : 95/12/27/13: 0-86/ 1/18/11: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

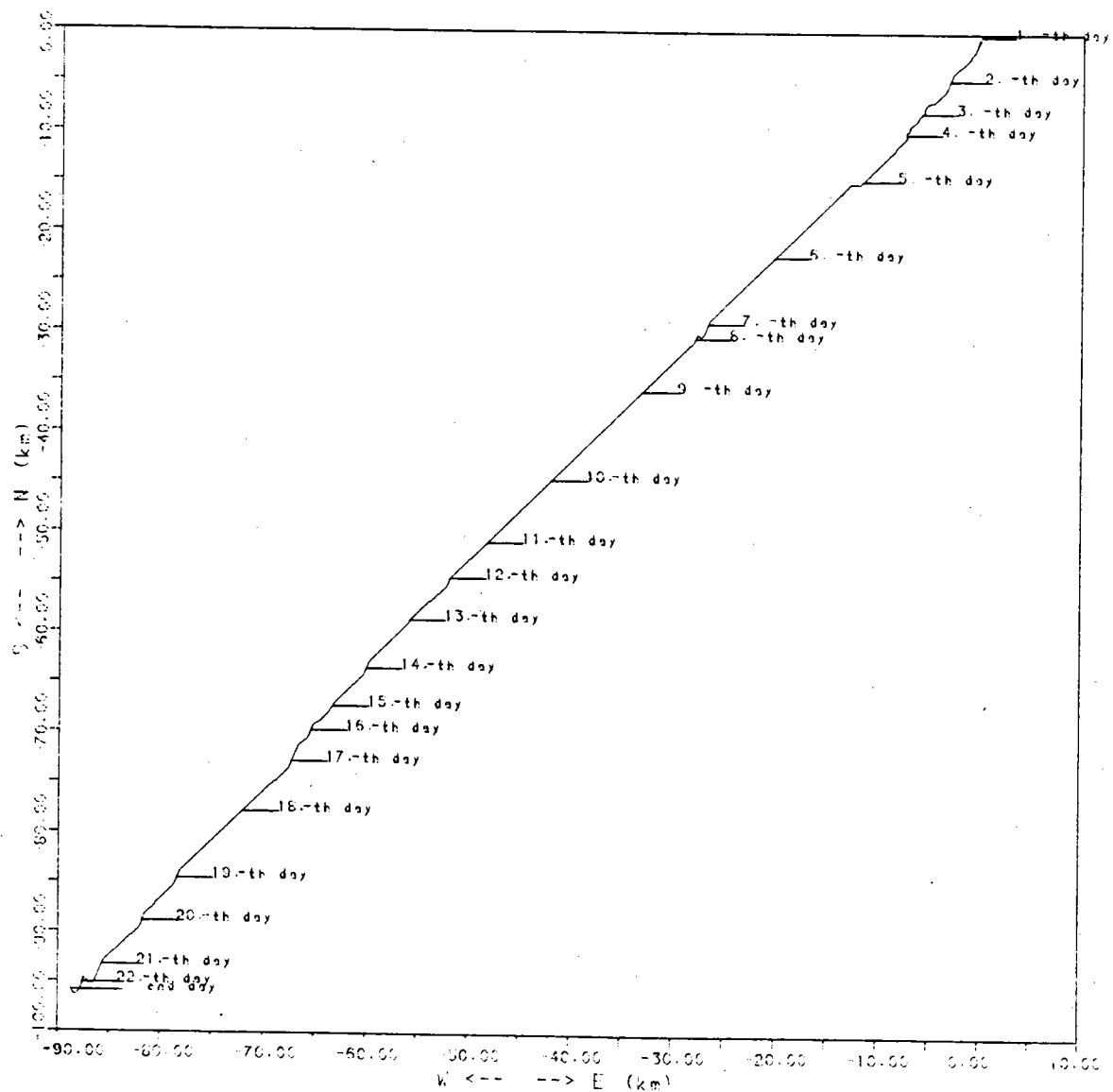


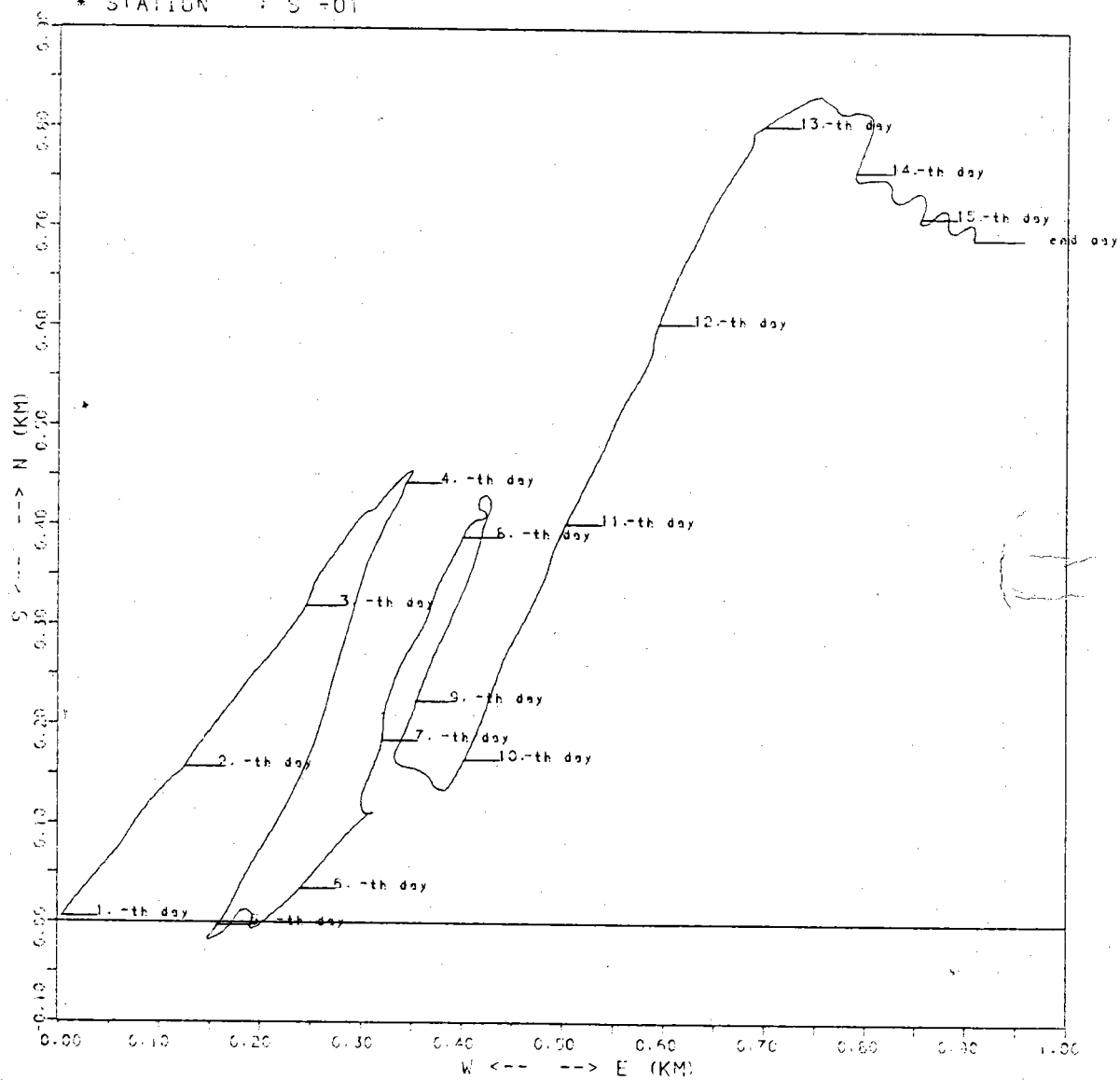
圖 V - 8 (b)

P.V-D DIAGRAM OF CURRENT

* IN/OUT TM.: 86/04/08/13: 0-86/04/23/12:00

* AREA : TAI-CHUNG HARBOUR

* STATION : S -01



圖V - 9 (a)

P.V.D DIAGRAM OF WIND

* DURATION : 96/ 4/ 8/13: 0-96/ 4/23/12: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

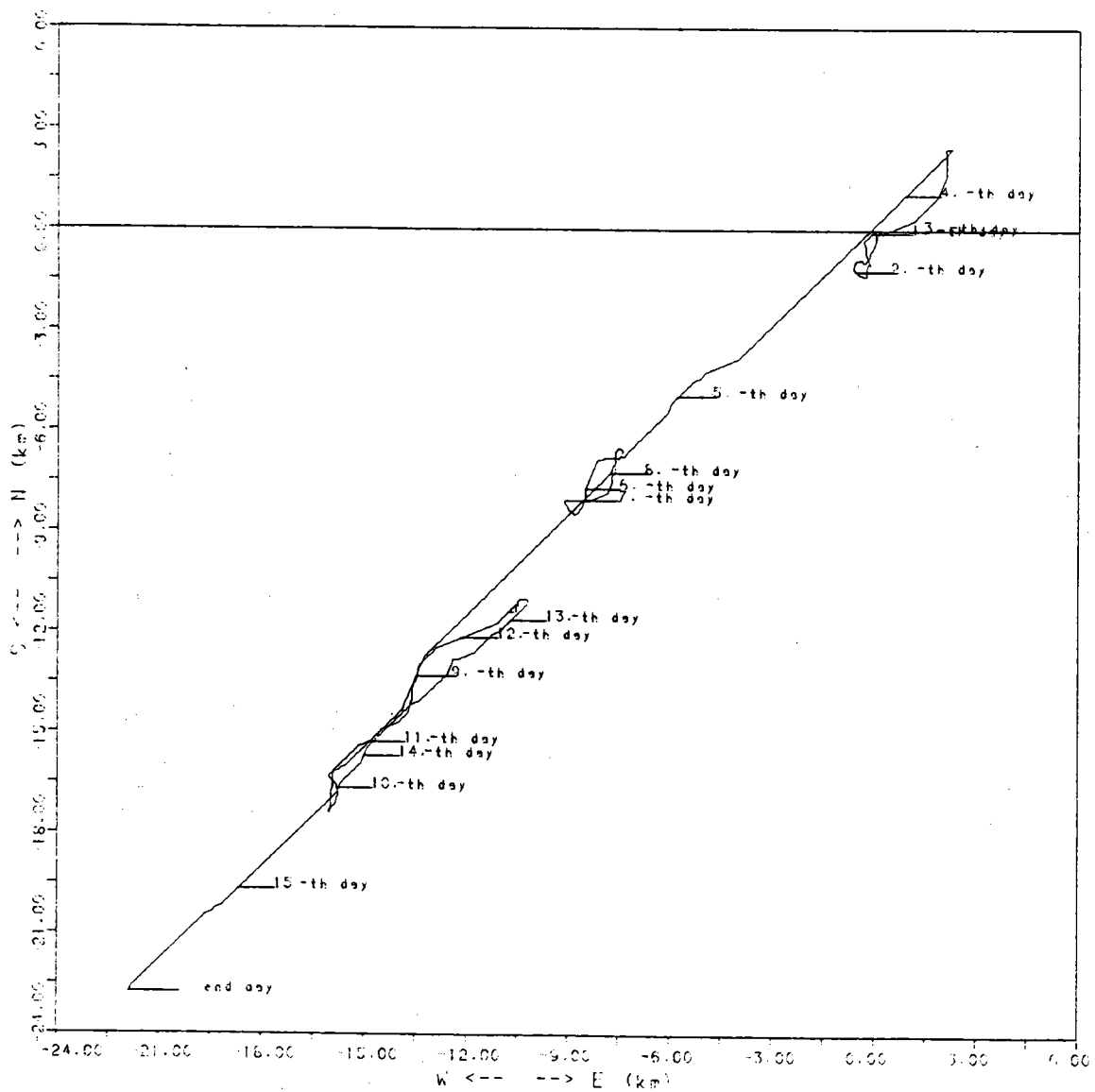


圖 V - 9 (b)

P.V.D DIAGRAM OF CURRENT

* DURATION : 86/12/19/11: 0-87/ 1/ 6/ 2: 0

* AREA : TAI-CHUNG HAROUR

* STATION : BU

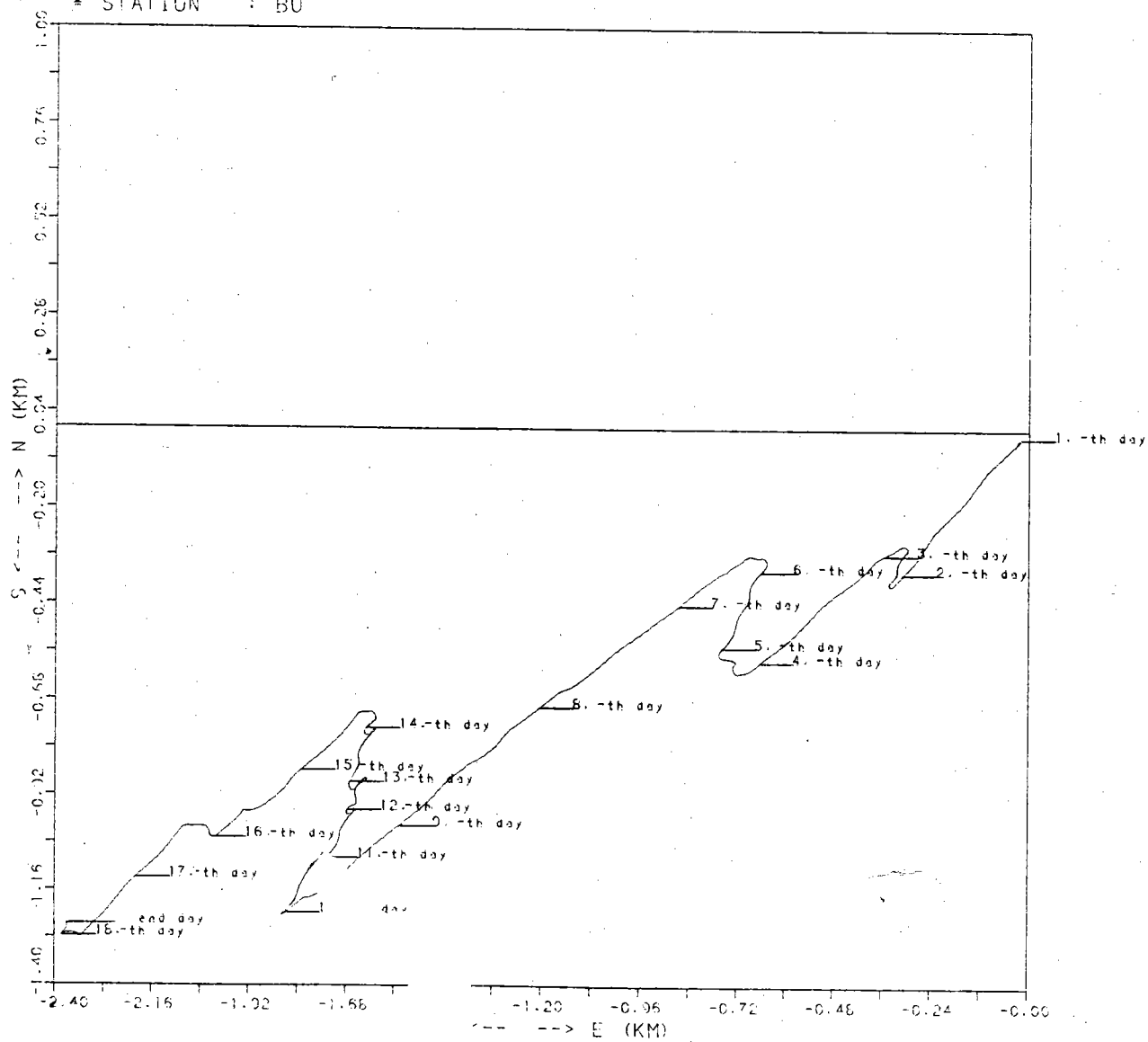


圖 V - 10 (a)

P.V.D DIAGRAM OF WIND

* DURATION : 86/12/19/11: 0-87/ 1/ 6/ 2: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

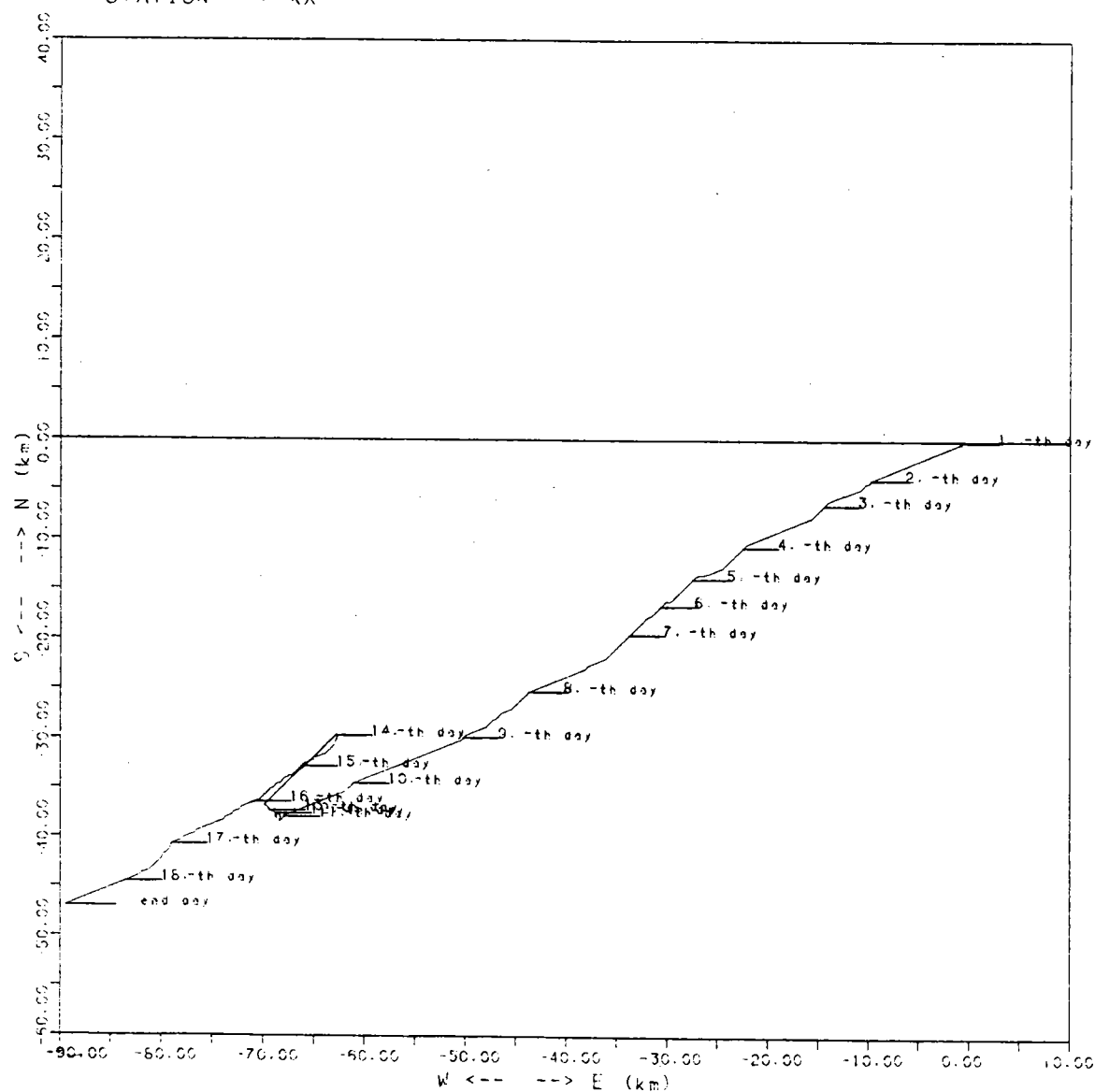


圖 V - 10 (b)

P.V.D DIAGRAM OF CURRENT

* IN/OUT TM.: 87/03/06/12:00-87/03/24/11:00

* AREA : TAI-CHUNG HARBOUR

* STATION : G-

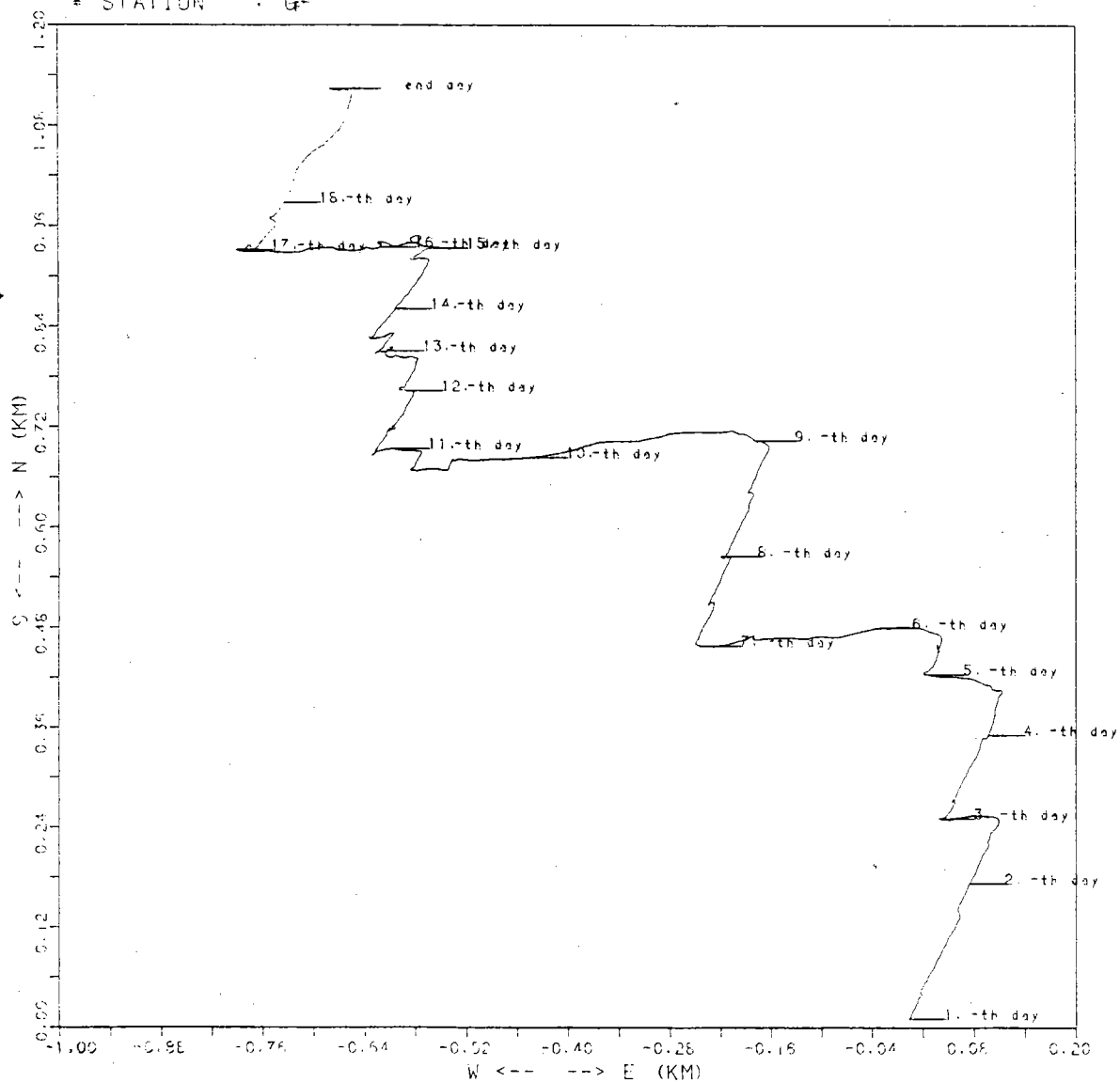


圖 V - 11 (a)

P.V.D DIAGRAM OF WIND

* DURATION : 87/ 3/ 6/12: 9-87/ 3/24/11: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

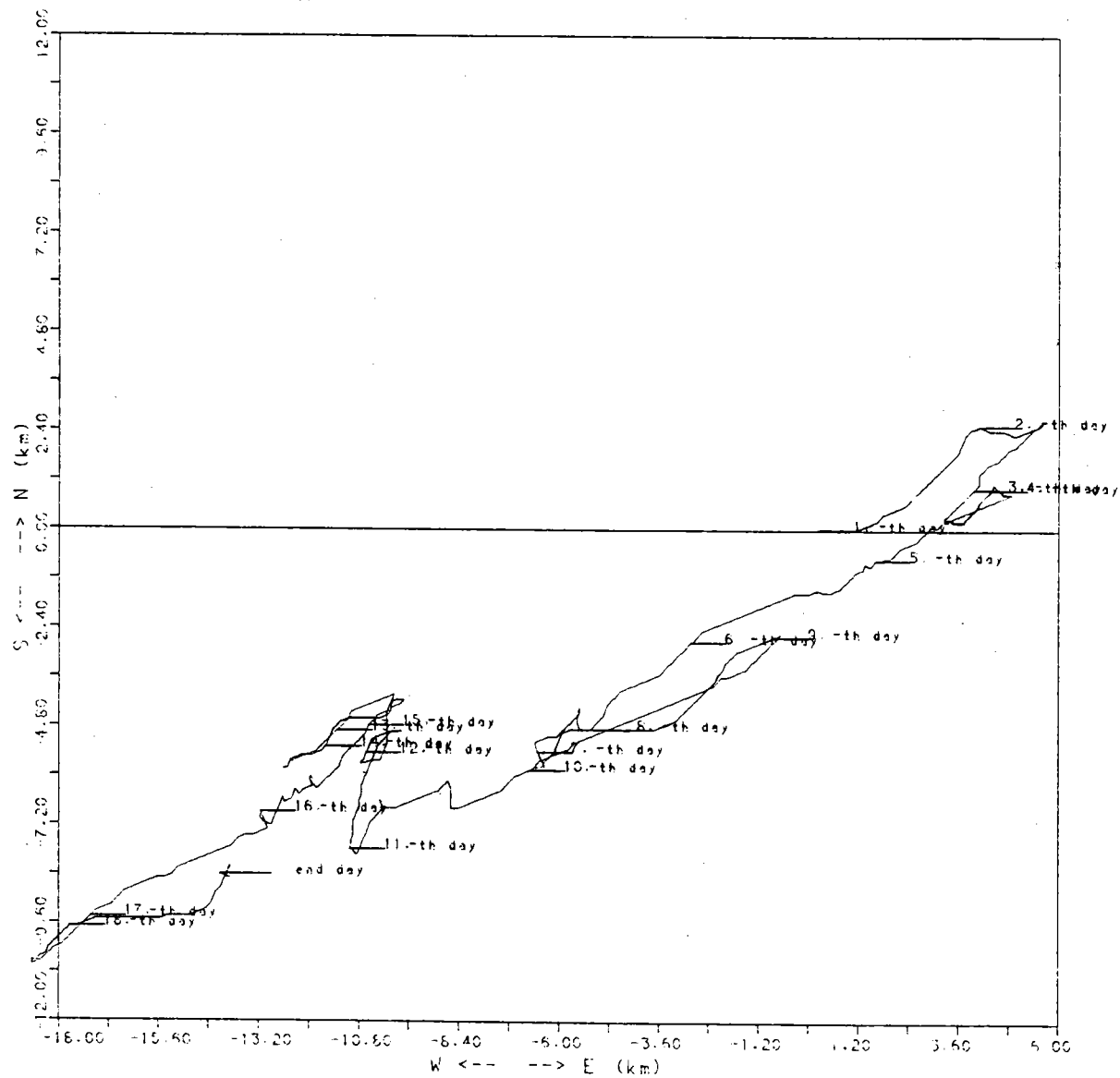


圖 V - 11 (b)

P.V.D DIAGRAM OF CURRENT

* IN/OUT TM.: 87/03/05/12: 0-87/03/24/09:00

* AREA : TAI-CHUNG HARBOUR

* STATION : H-

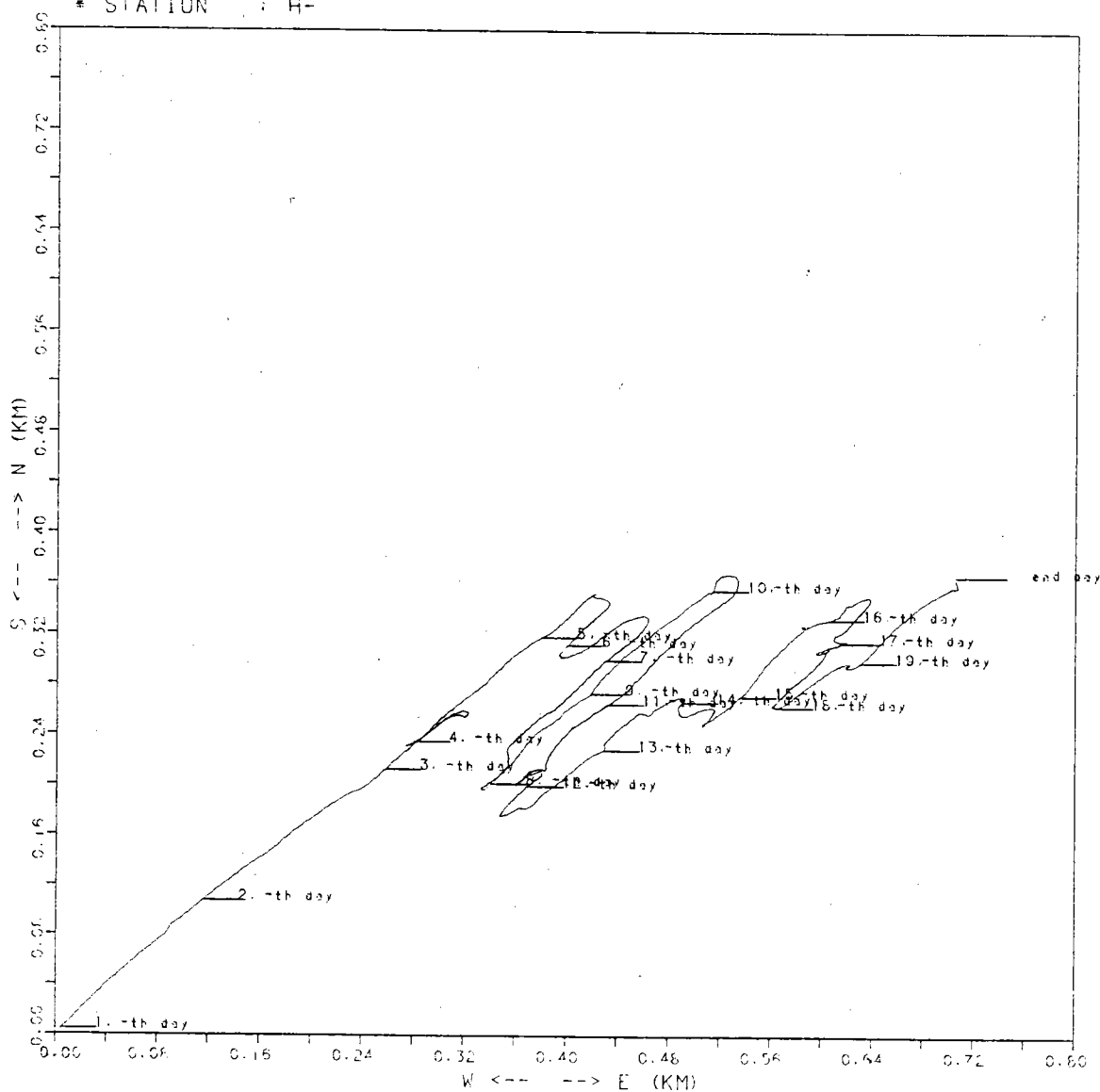


圖 V - 12 (a)

P.V.D DIAGRAM OF WIND

* DURATION : 87/ 3/ 5/12: 0-87/ 3/24/ 9: 0
 * AREA : TAI-CHUNG HARBOUR
 * STATION : XX

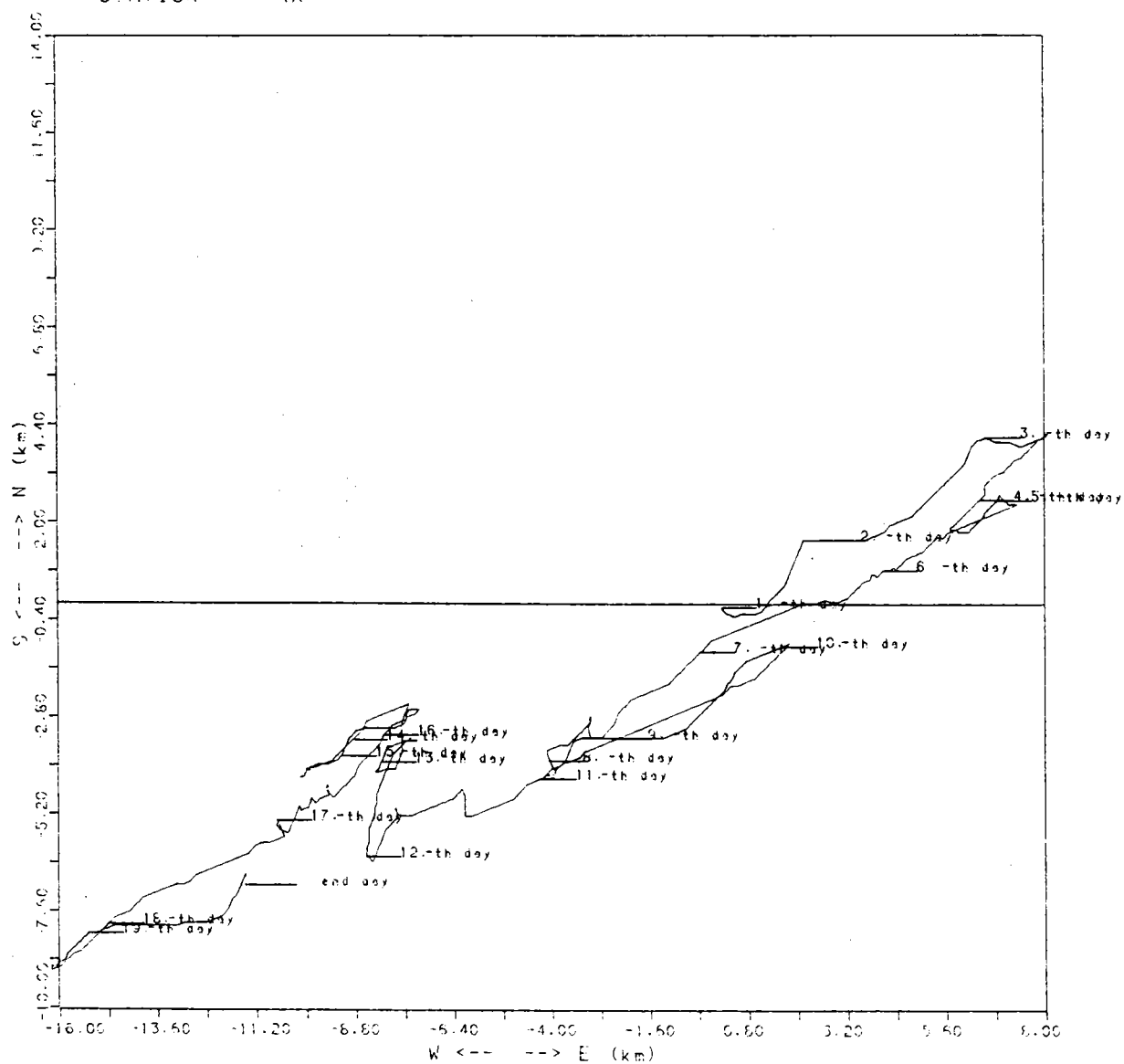


圖 V - 12 (b)

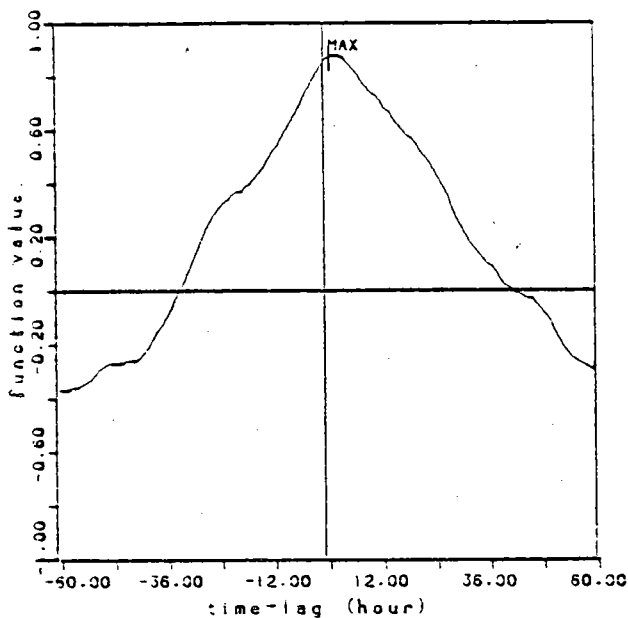
附 圖 VI

風與流 東西分量、南北分量、沿岸及向（離）岸分量相關圖

圖 號	時 間	測 站	備 註
VI - 1	86/01/16-01/29	BU	
VI - 2	86/01/16-01/29	BD	
VI - 3	86/02/03-02/25	BU	
VI - 4	86/02/03-02/25	BD	
VI - 5	86/03/07-04/03	BD	
VI - 6	86/04/04-04/23	BD	
VI - 7	86/03/08-04/03	D	
VI - 8	85/12/17-86/01/18	E	
VI - 9	86/04/08-04/23	S	
VI - 10	87/03/06-03/24	G	
VI - 11	87/03/05-03/24	H	

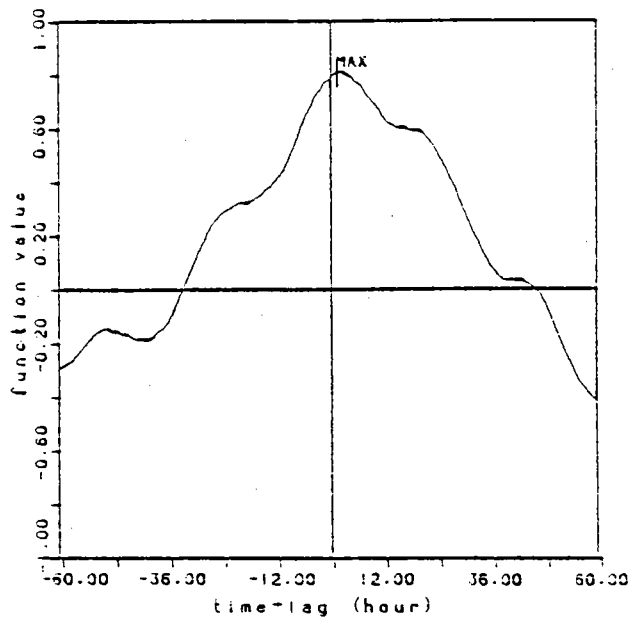
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND E-W COMP. with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.88 (TIME LAG(HR)) : 01.



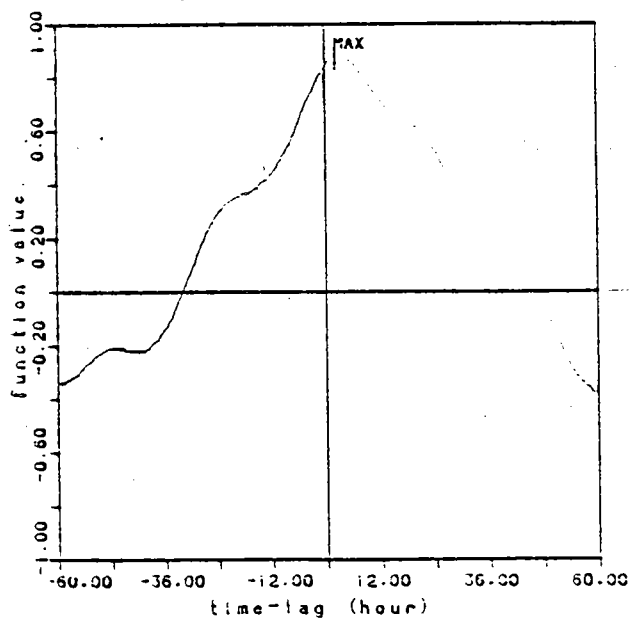
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND N-S COMP. with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.81 (TIME LAG(HR)) : 02.



CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.89 (TIME LAG(HR)) : 02.



CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.26 (TIME LAG(HR)) : --.

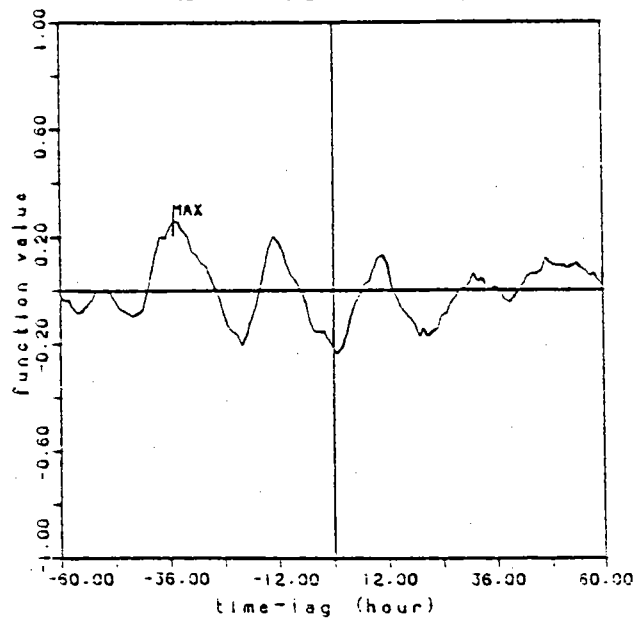
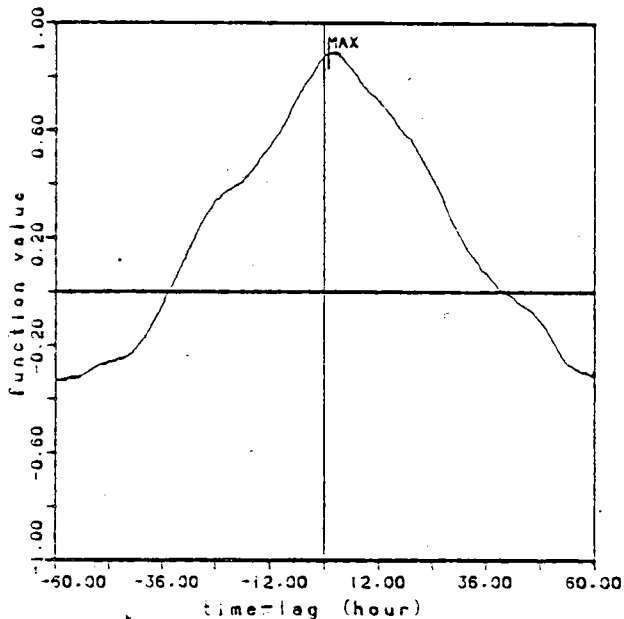


圖 VI - 1

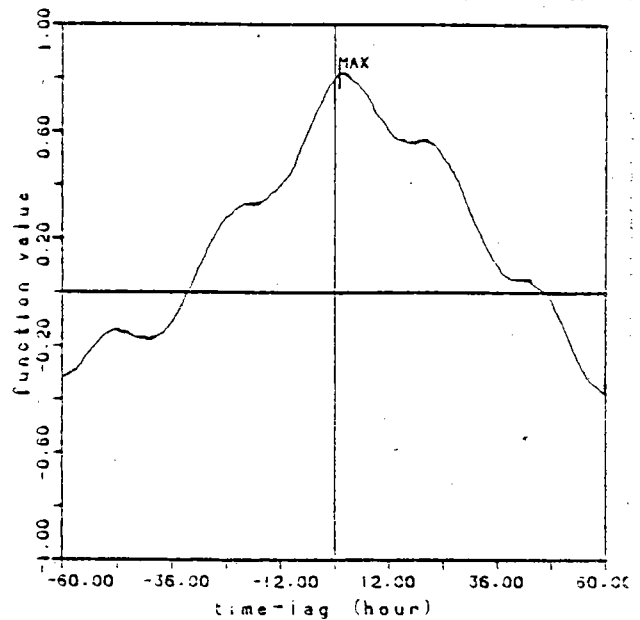
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-01
 • X : WIND E-W COMP. with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.89 TIME LAG(HR) : 01.



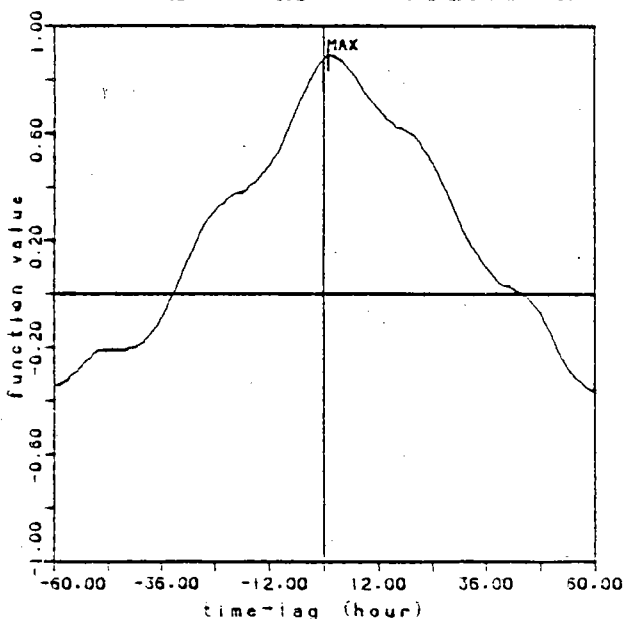
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-01
 • X : WIND N-S COMP. with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.82 TIME LAG(HR) : 01.



CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-01
 • X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.89 TIME LAG(HR) : 01.



CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-01
 • X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.21 TIME LAG(HR) : 01.

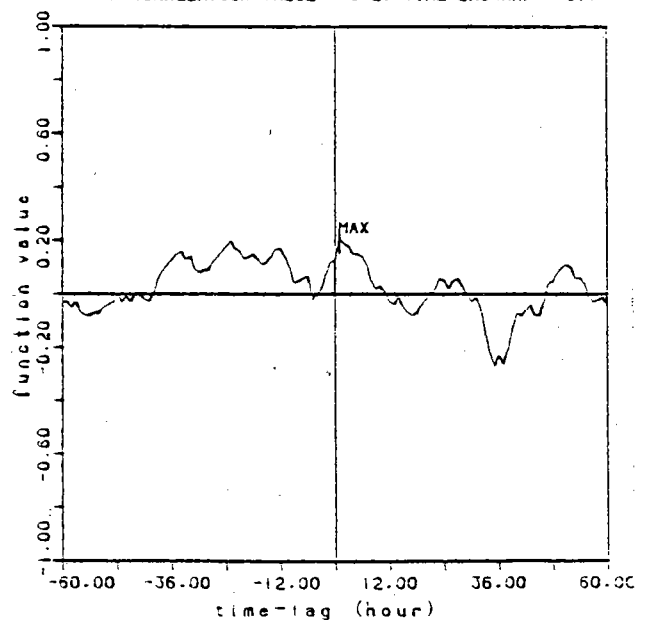
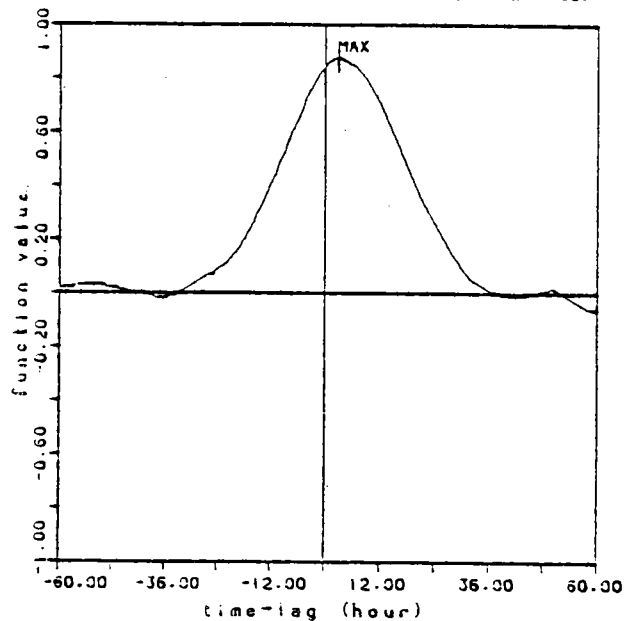


圖 VI - 2

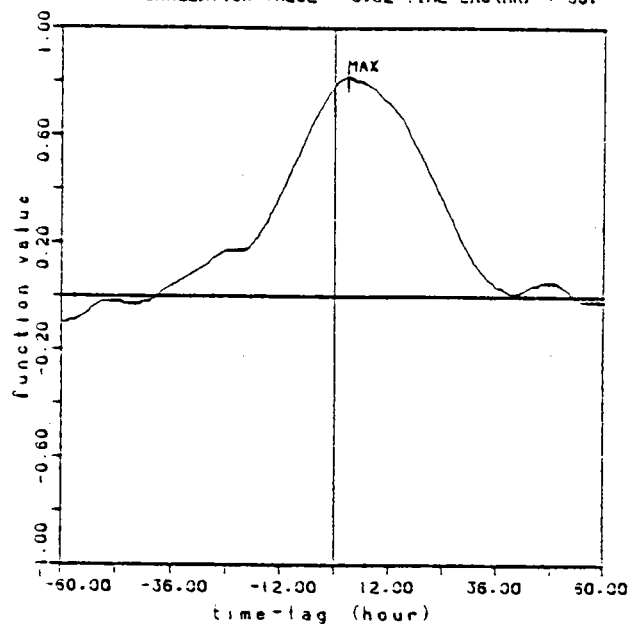
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND E-W COMP. with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.88 TIME LAG(HR) : 03.



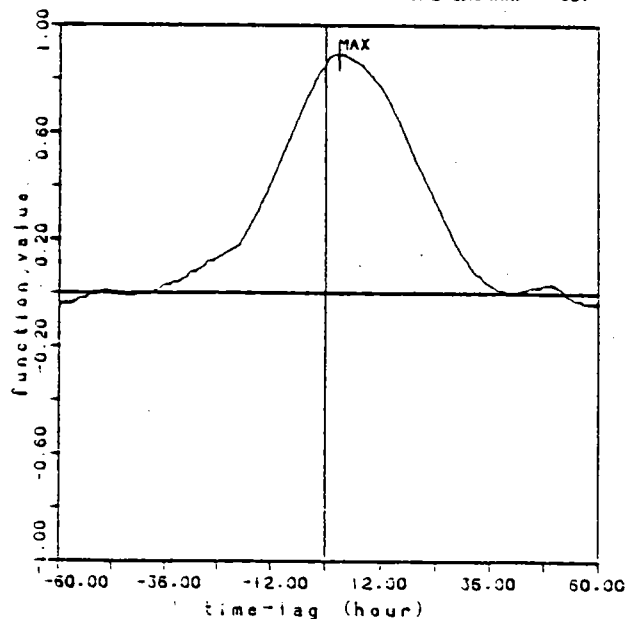
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND N-S COMP. with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.82 TIME LAG(HR) : 03.



CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.89 TIME LAG(HR) : 03.



CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.18 TIME LAG(HR) : --.

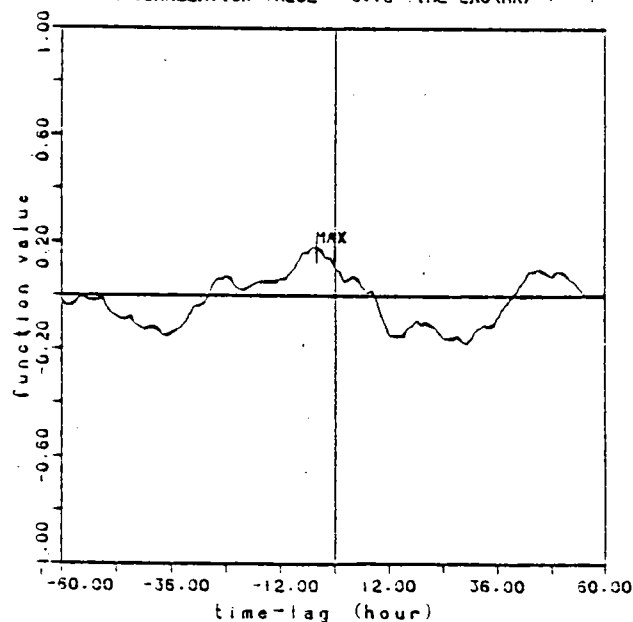
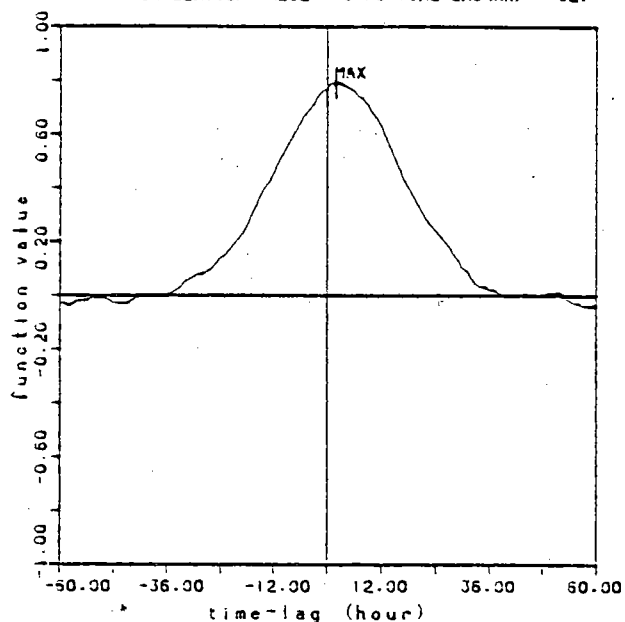


圖 VI - 3

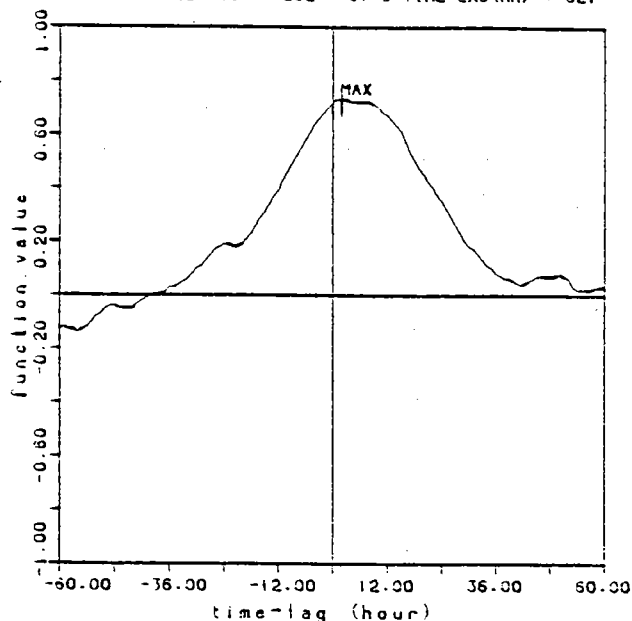
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-01
 • X : WIND E-W COMP. with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.79 TIME LAG(HR) : 02.



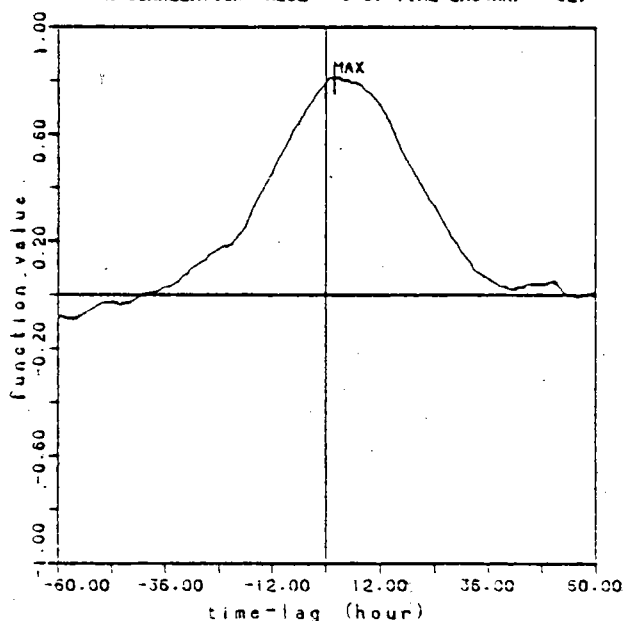
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-01
 • X : WIND N-S COMP. with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.73 TIME LAG(HR) : 02.



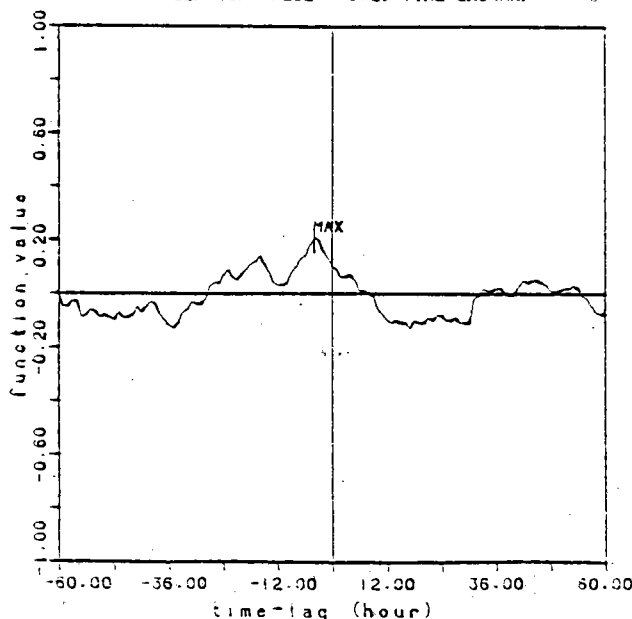
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-01
 • X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.81 TIME LAG(HR) : 02.



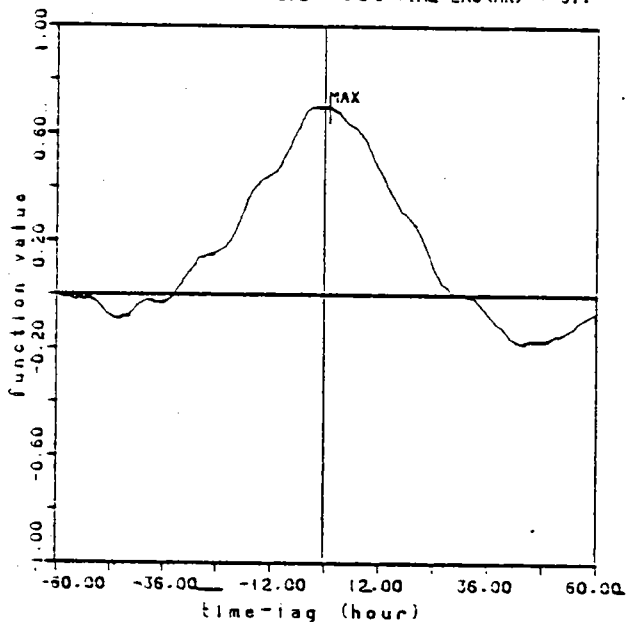
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-01
 • X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.21 TIME LAG(HR) : 02.



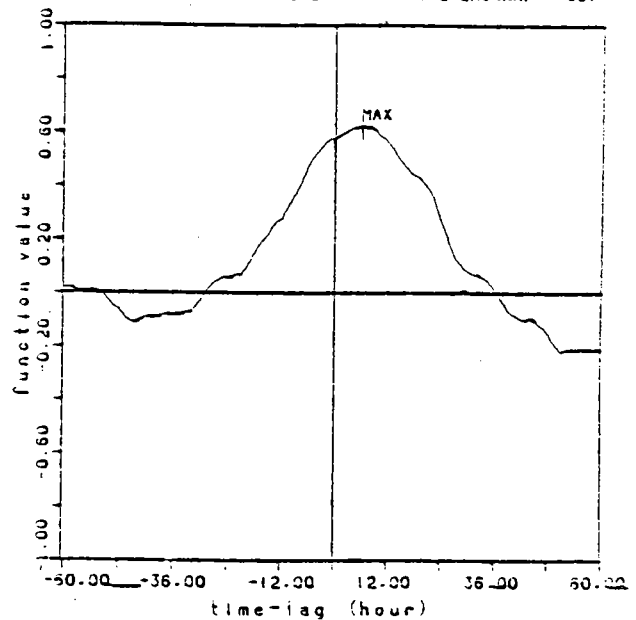
CROSS-CORRELATION FUNCTION

- DATE : 86/03/07/13: 0-86/04/03/13:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : 90-02
- X : WIND E-W COMP. with Y : CURRENT E-W COM
- MAX CORRELATION VALUE : 0.70 TIME LAG (HR) : 01.



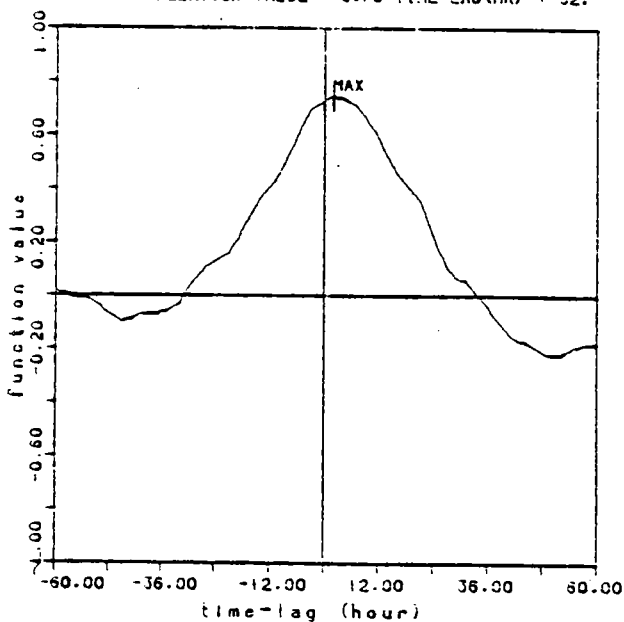
CROSS-CORRELATION FUNCTION

- DATE : 86/03/07/13: 0-86/04/03/13:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : 90-02
- X : WIND N-S COMP. with Y : CURRENT N-S COM
- MAX CORRELATION VALUE : 0.63 TIME LAG (HR) : 06.



CROSS-CORRELATION FUNCTION

- DATE : 86/03/07/13: 0-86/04/03/13:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : 90-02
- X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
- MAX CORRELATION VALUE : 0.75 TIME LAG (HR) : 02.



CROSS-CORRELATION FUNCTION

- DATE : 86/03/07/13: 0-86/04/03/13:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : 90-02
- X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
- MAX CORRELATION VALUE : 0.18 TIME LAG (HR) : 46.

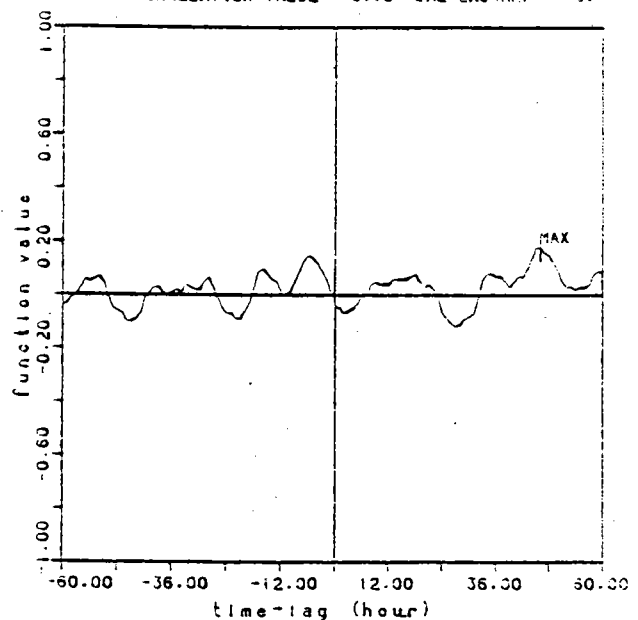
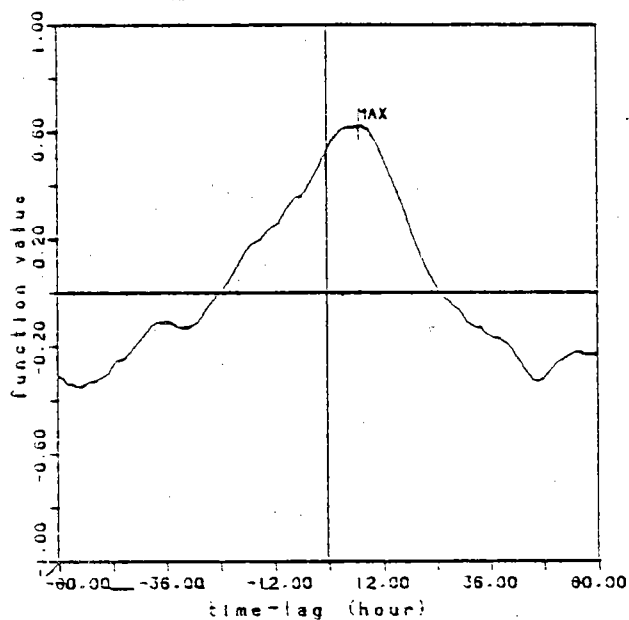


圖 VI - 5

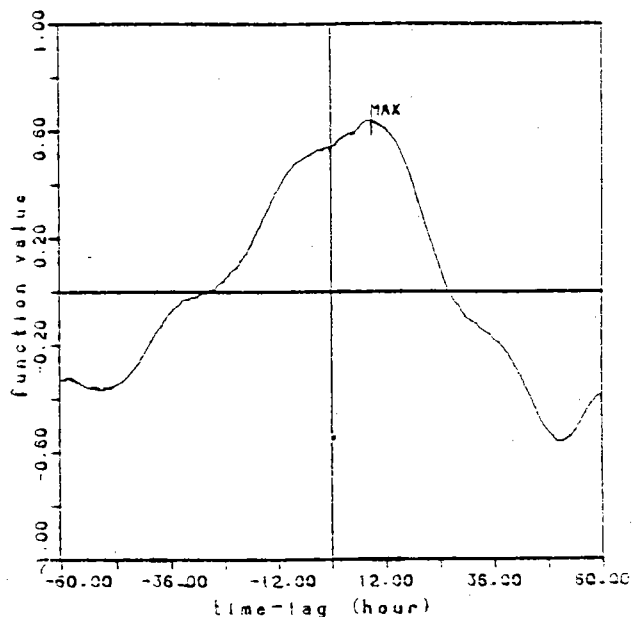
CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-03
 • X : WIND E-W COMP. with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.63 TIME LAG(HR) : 07.



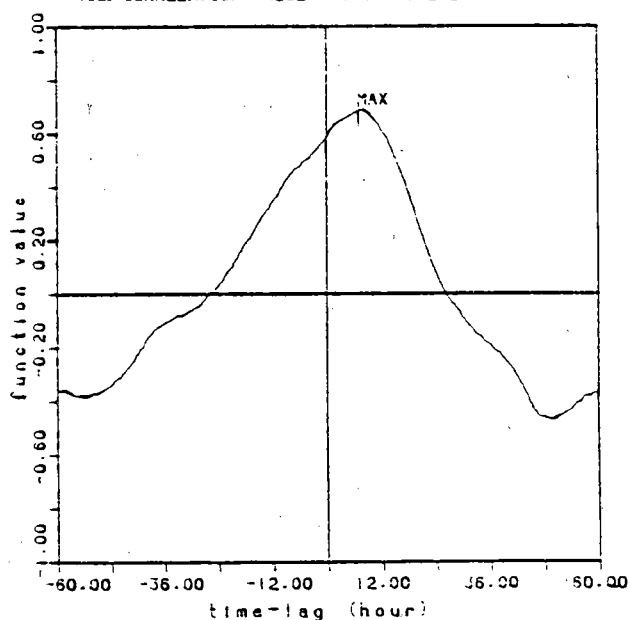
CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-03
 • X : WIND N-S COMP. with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.64 TIME LAG(HR) : 09.



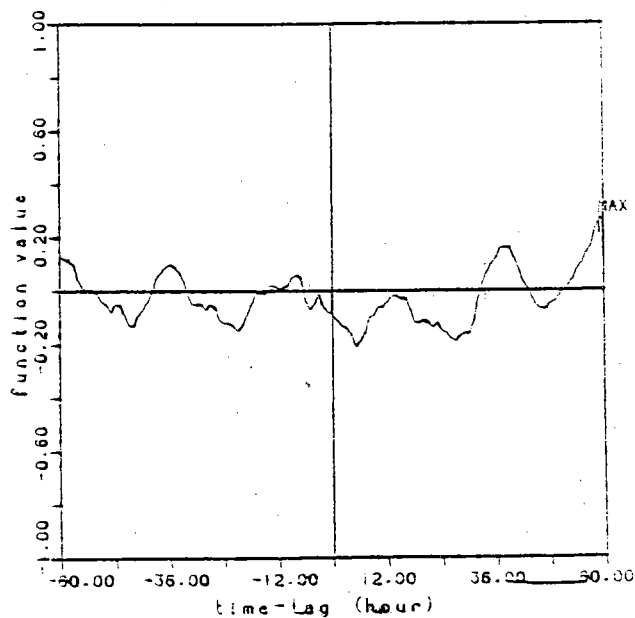
CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-03
 • X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.69 TIME LAG(HR) : 07.



CROSS-CORRELATION FUNCTION

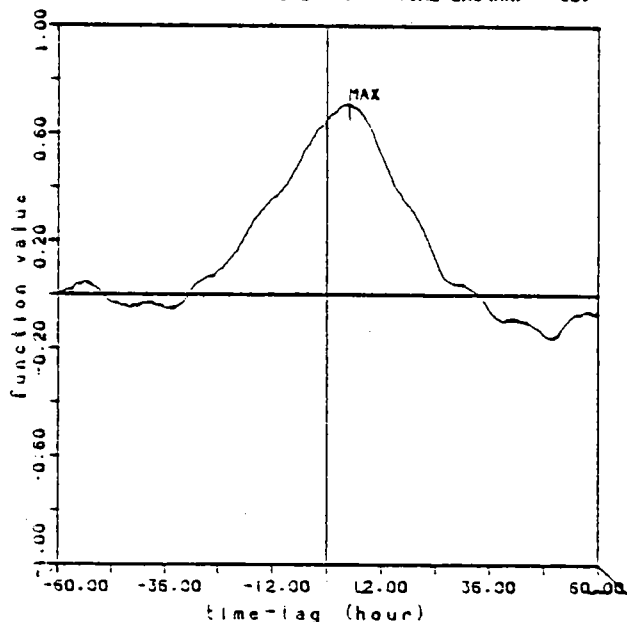
• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-03
 • X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.27 TIME LAG(HR) : 59.



圖VI-6

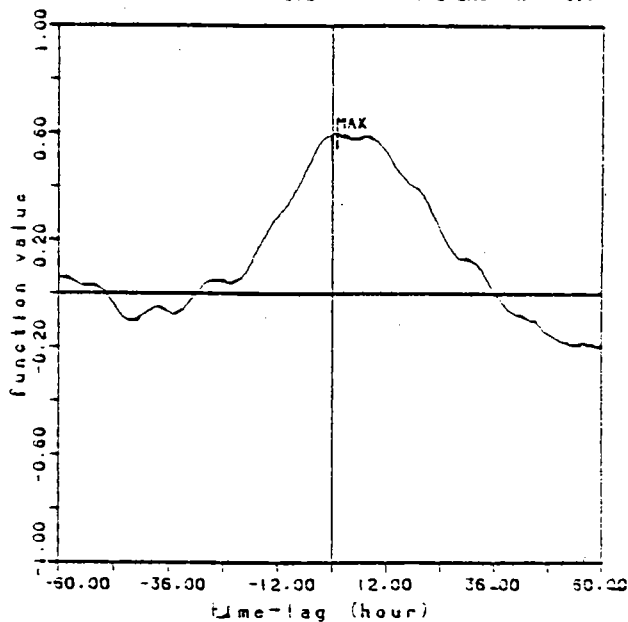
CROSS-CORRELATION FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0 -02
 • X : WIND E-W COMP. with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.71 TIME LAG(HR) : 05.



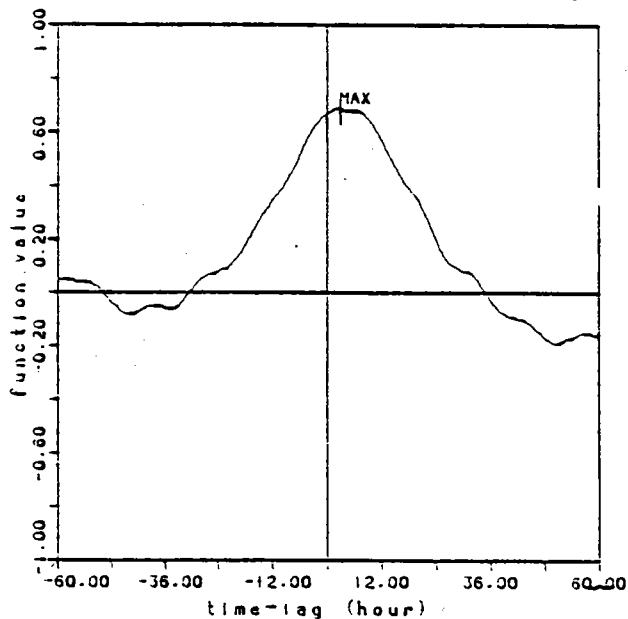
CROSS-CORRELATION FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0 -02
 • X : WIND N-S COMP. with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.60 TIME LAG(HR) : 01.



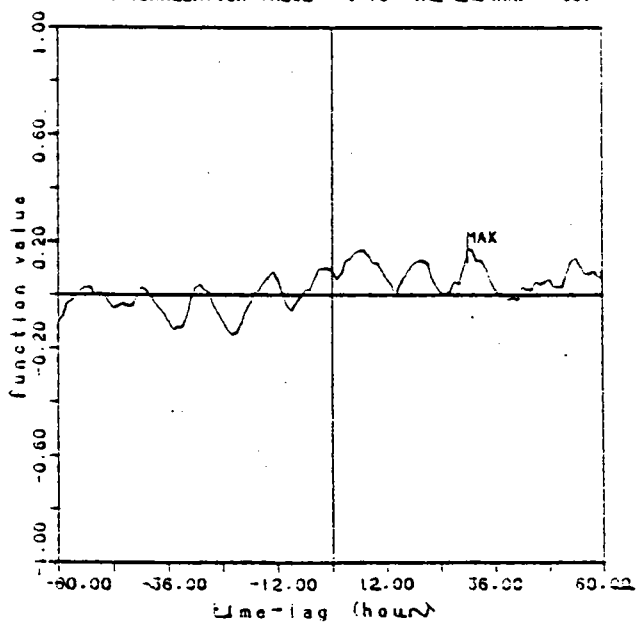
CROSS-CORRELATION FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0 -02
 • X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.69 TIME LAG(HR) : 03.



CROSS-CORRELATION FUNCTION

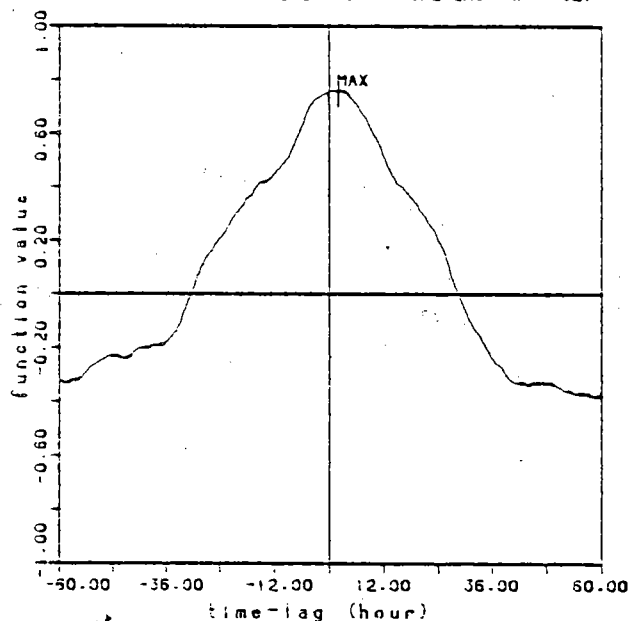
• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0 -02
 • X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.18 TIME LAG(HR) : 50.





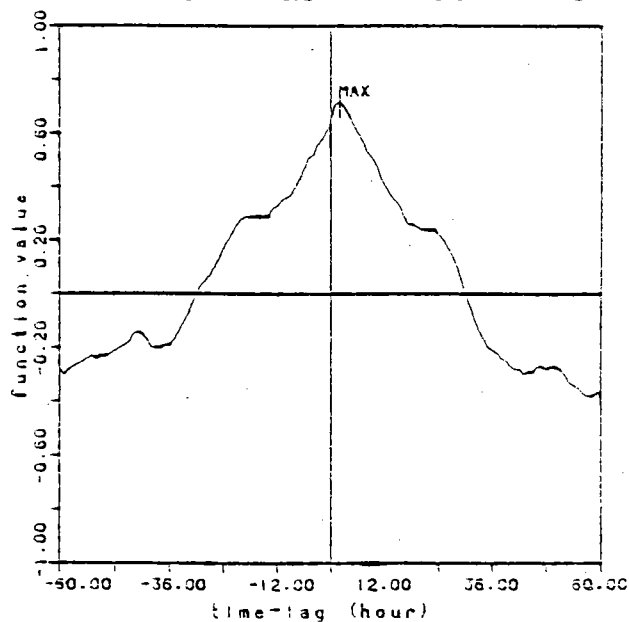
CROSS-CORRELATION FUNCTION

- DATE : 85/12/27/13: 0-86/01/18/11:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : E-01
- X : WIND E-W COMP. with Y : CURRENT E-W COM
- MAX CORRELATION VALUE : 0.76 TIME LAG(HR) : 02.



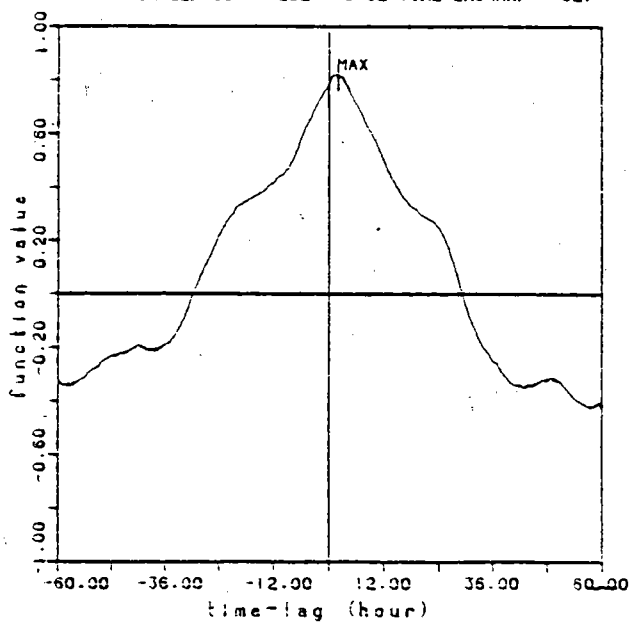
CROSS-CORRELATION FUNCTION

- DATE : 85/12/27/13: 0-86/01/18/11:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : E-01
- X : WIND N-S COMP. with Y : CURRENT N-S COM
- MAX CORRELATION VALUE : 0.72 TIME LAG(HR) : 02.



CROSS-CORRELATION FUNCTION

- DATE : 85/12/27/13: 0-86/01/18/11:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : E-01
- X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
- MAX CORRELATION VALUE : 0.62 TIME LAG(HR) : 02.



CROSS-CORRELATION FUNCTION

- DATE : 85/12/27/13: 0-86/01/18/11:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : E-01
- X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
- MAX CORRELATION VALUE : 0.23 TIME LAG(HR) : 02.

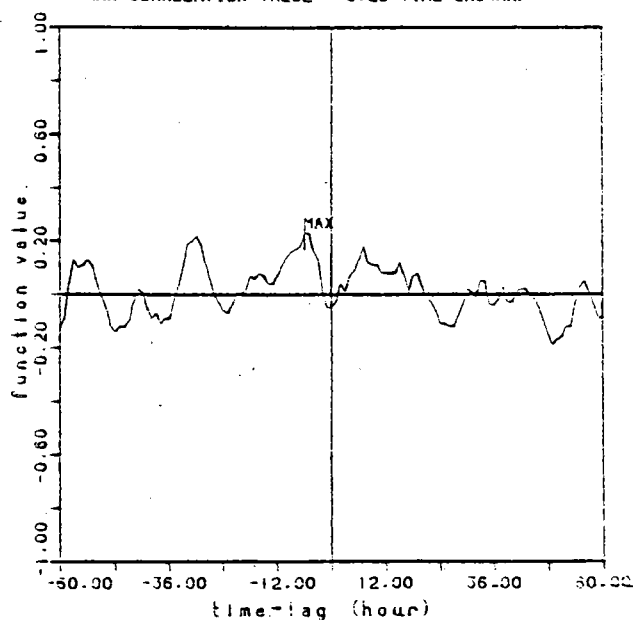
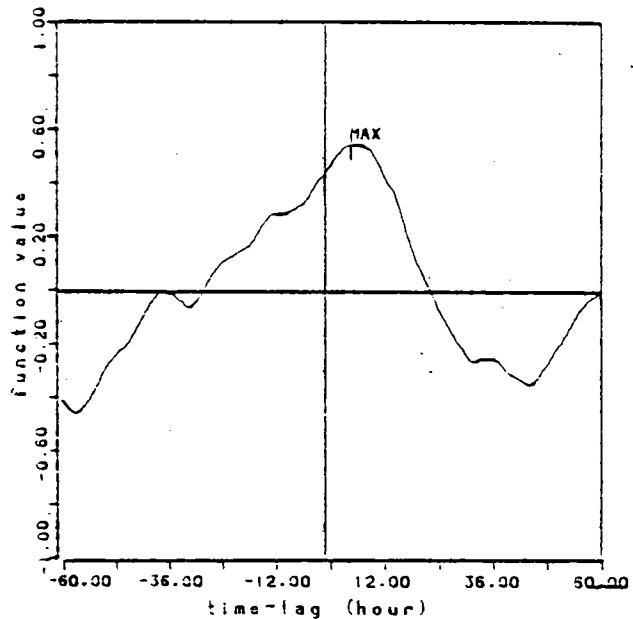


圖 VI - 8

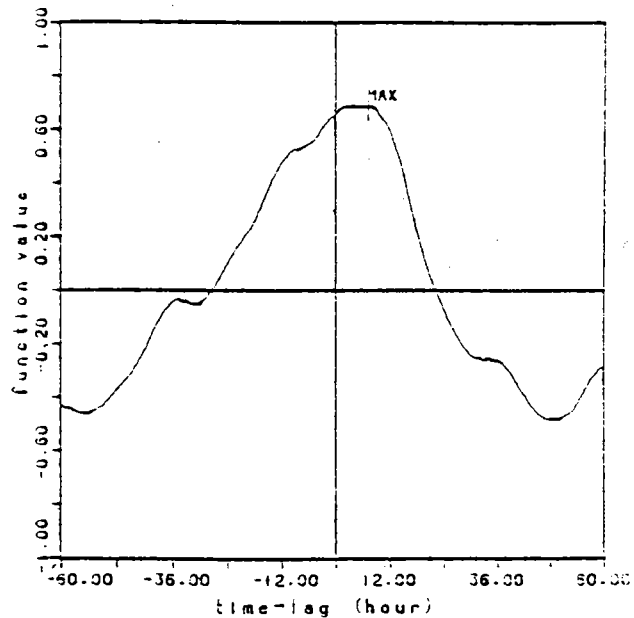
CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : S-01
 • X : WIND E-W COMP. with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.55 TIME LAG(HR) : 05.



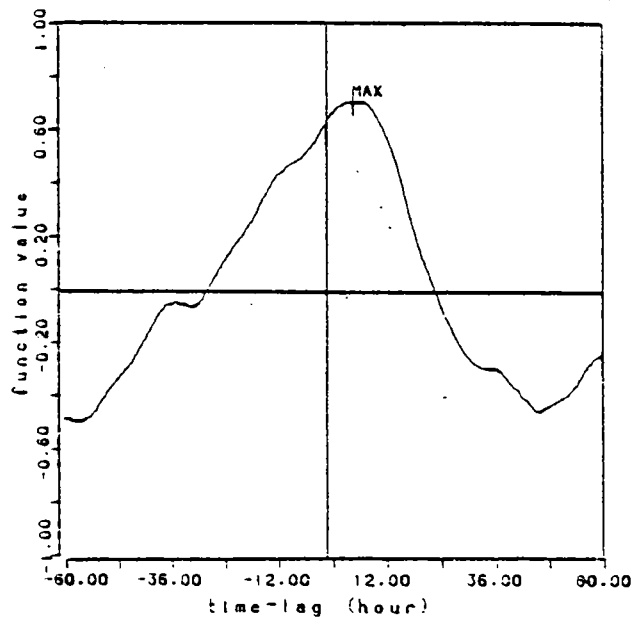
CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : S-01
 • X : WIND N-S COMP. with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.69 TIME LAG(HR) : 07.



CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : S-01
 • X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.71 TIME LAG(HR) : 05.



CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : S-01
 • X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.28 TIME LAG(HR) : 60.

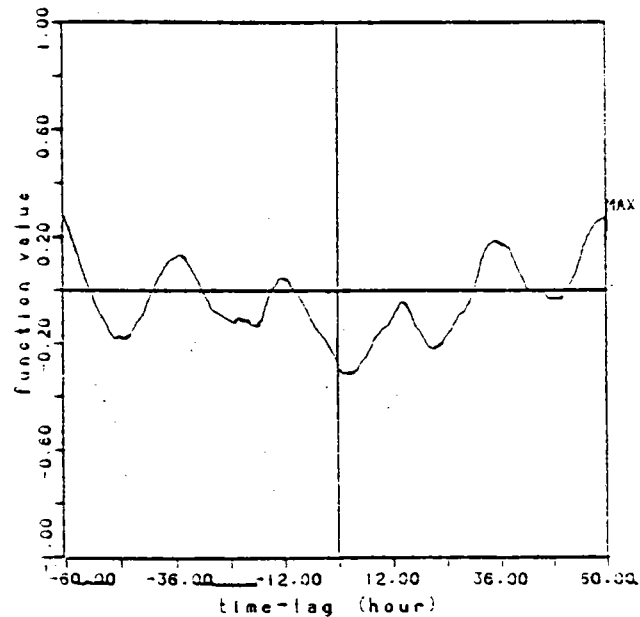
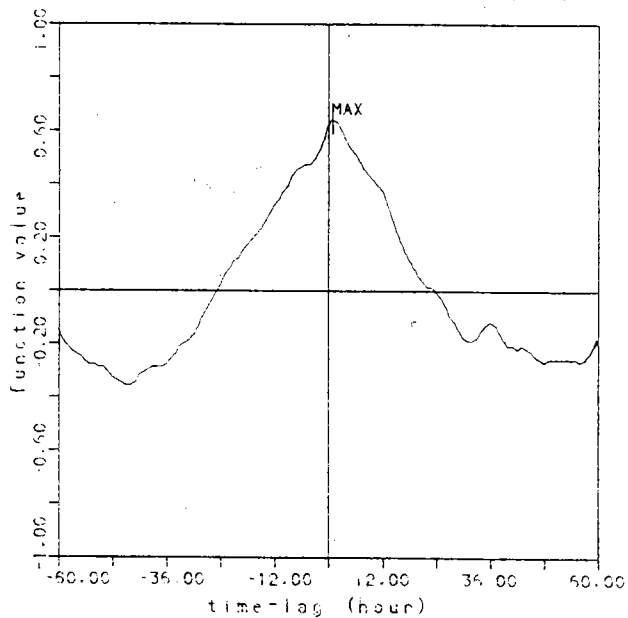


圖 VI - 9

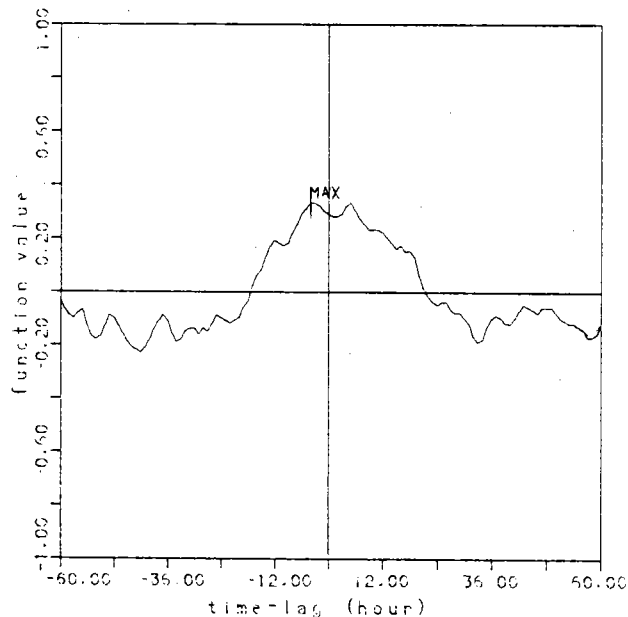
CROSS-CORRELATION FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0-
 • X : WIND E-W COM. with Y : CURRENT E-W COM.
 MAX CORRELATION VALUE : 0.64 TIME LAG (HR) : 0.



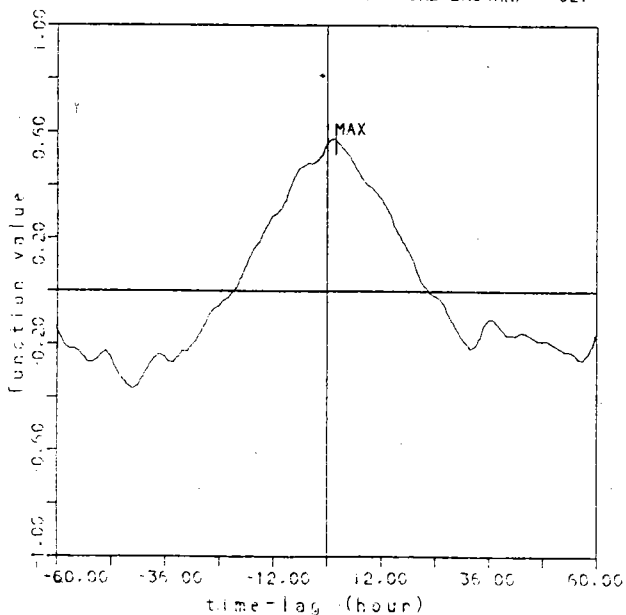
CROSS-CORRELATION FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0-
 • X : WIND N-S COM. with Y : CURRENT N-S COM.
 MAX CORRELATION VALUE : 0.33 TIME LAG (HR) : **.



CROSS-CORRELATION FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0-
 • X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.57 TIME LAG (HR) : 02.



CROSS-CORRELATION FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0-
 • X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.35 TIME LAG (HR) : 00.

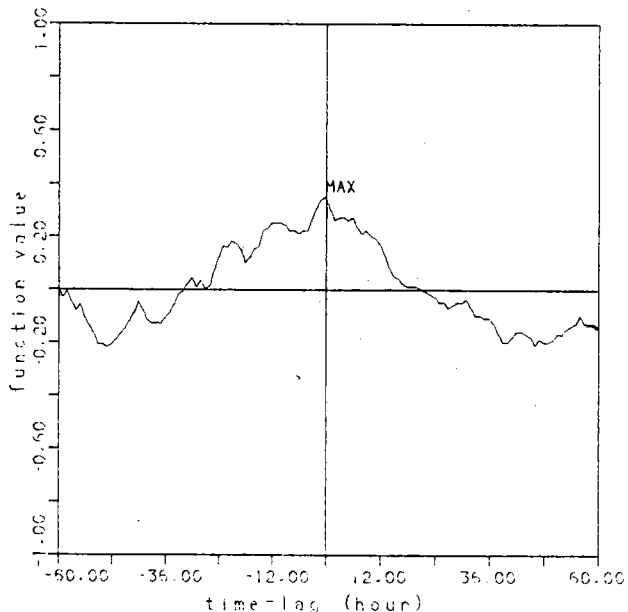
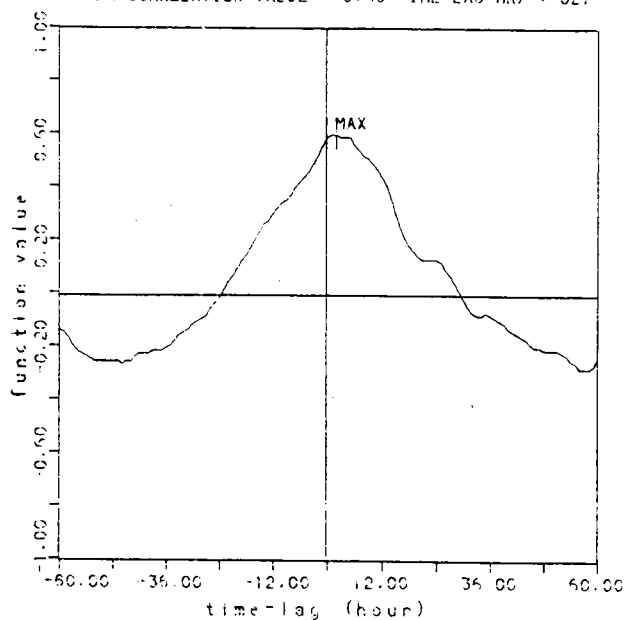


圖 VI - 10

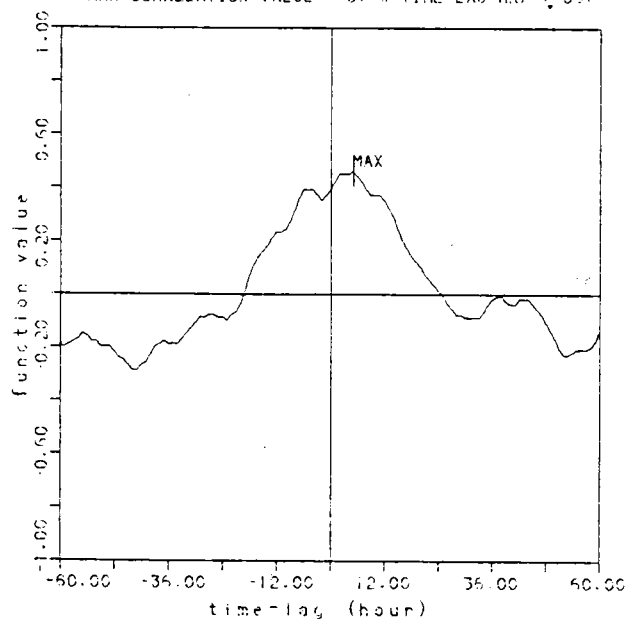
CROSS-CORRELATION FUNCTION

- DATE : 87/03/05/12: 0-87/03/24/03:0
- AREA TYPE : TAI-CHUNG HARBOUR
- STATION X : XX Y : H-
- X : WIND E-W COMP. with Y : CURRENT E-W COM
- MAX CORRELATION VALUE : 0.60 TIME LAG (HR) : 02.



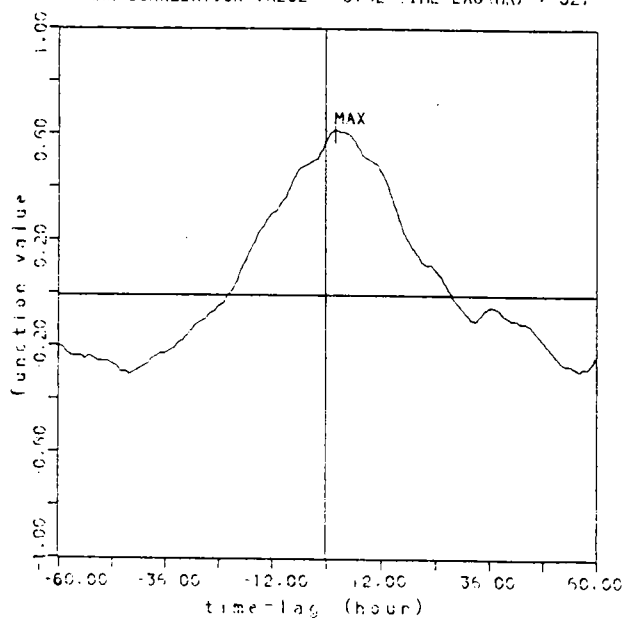
CROSS-CORRELATION FUNCTION

- DATE : 87/03/05/12: 0-87/03/24/03:0
- AREA TYPE : TAI-CHUNG HARBOUR
- STATION X : XX Y : H-
- X : WIND N-S COMP. with Y : CURRENT N-S COM
- MAX CORRELATION VALUE : 0.46 TIME LAG (HR) : 05.



CROSS-CORRELATION FUNCTION

- DATE : 87/03/05/12: 0-87/03/24/03:0
- AREA TYPE : TAI-CHUNG HARBOUR
- STATION X : XX Y : H-
- X : WIND ALONG-SHOR with Y : CURRENT ALONG-S
- MAX CORRELATION VALUE : 0.62 TIME LAG (HR) : 02.



CROSS-CORRELATION FUNCTION

- DATE : 87/03/05/12: 0-87/03/24/03:0
- AREA TYPE : TAI-CHUNG HARBOUR
- STATION X : XX Y : H-
- X : WIND CROSS-SHOR with Y : CURRENT CROSS-S
- MAX CORRELATION VALUE : 0.20 TIME LAG (HR) : 05.

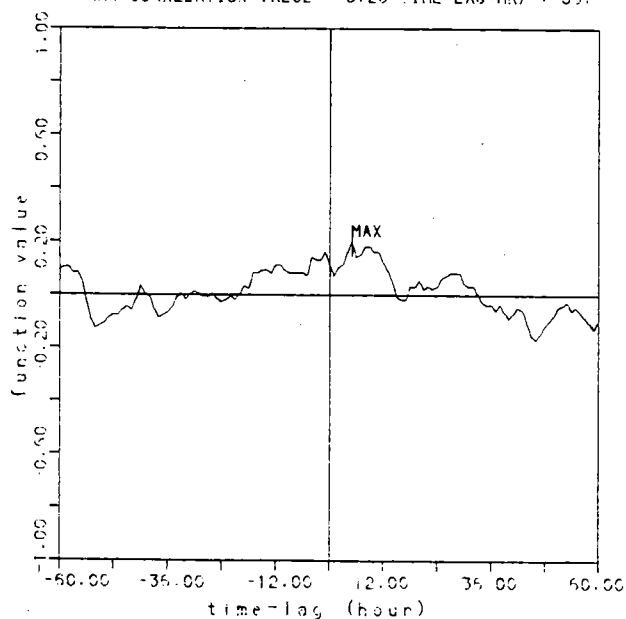


圖 VI - 11

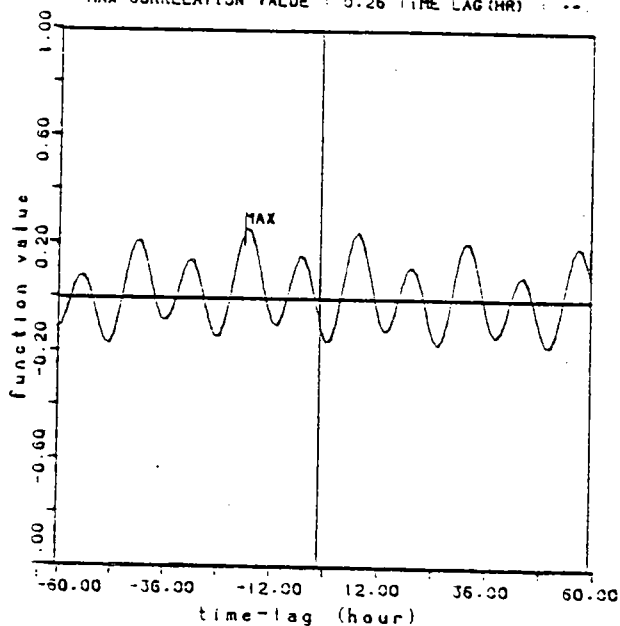
附 圖 VII

潮位與海流東西分量、南北分量，沿岸及向（離）岸分量相關圖

圖 號	時 間	測 站	備 註
VII - 1	86/01/16-01/29	BU	
VII - 2	86/01/16-01/29	BD	
VII - 3	86/02/03-02/25	BU	
VII - 4	86/02/03-02/25	BD	
VII - 5	86/03/07-04/03	BD	
VII - 6	86/04/04-04/23	BD	
VII - 7	86/03/08-04/03	D	
VII - 8	85/12/27-86/01/18	E	
VII - 9	86/04/08-04/23	S	
VII - 10	86/12/19-87/01/06	BU	
VII - 11	87/03/06-03/24	G	
VII - 12	87/03/05-03/24	H	

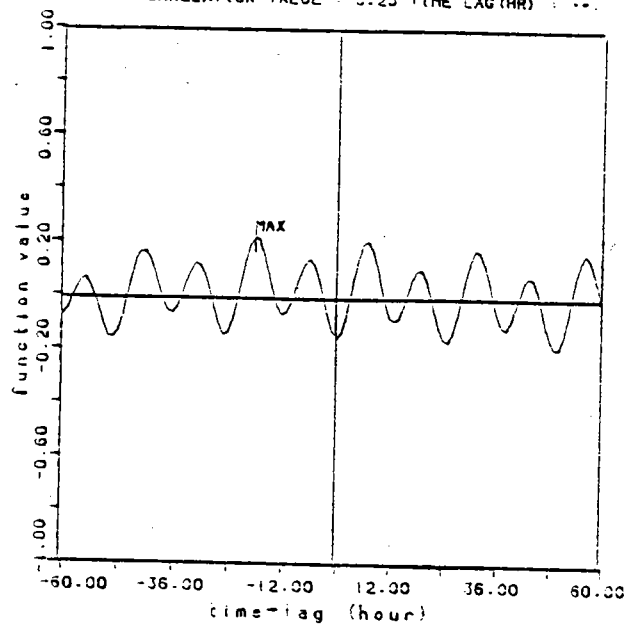
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.26 TIME LAG(HR) : --



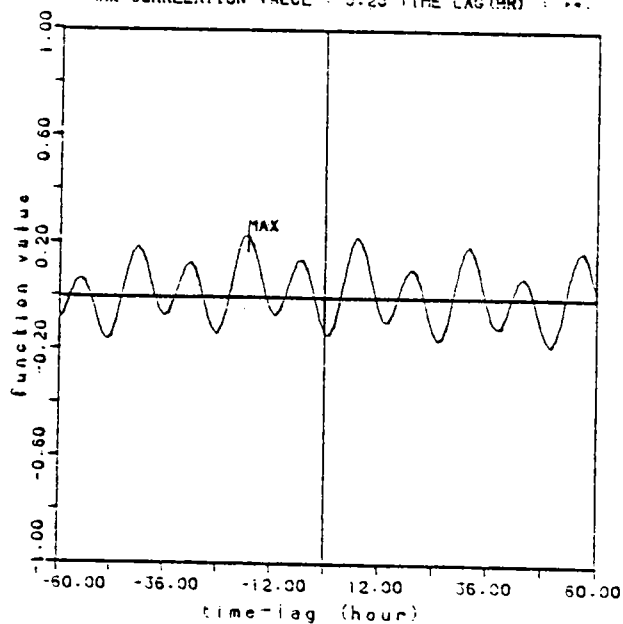
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 3U-01
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.23 TIME LAG(HR) : --



CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 3U-01
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.23 TIME LAG(HR) : --



CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 3U-01
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.36 TIME LAG(HR) : --

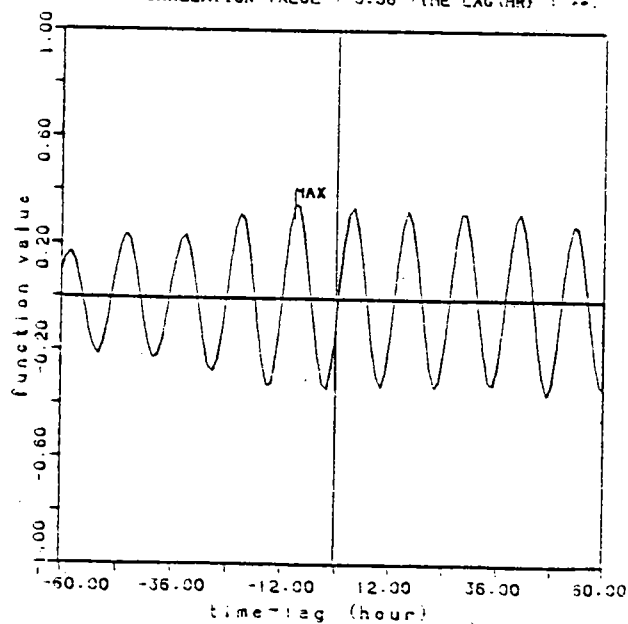
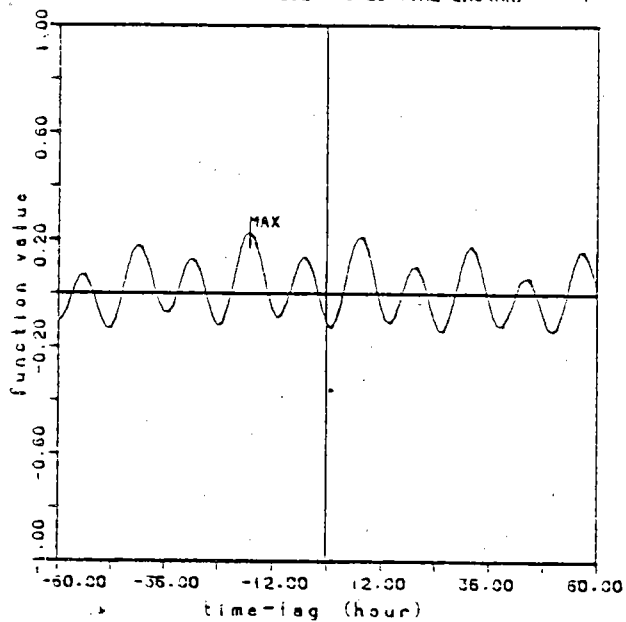


圖 VII - 1

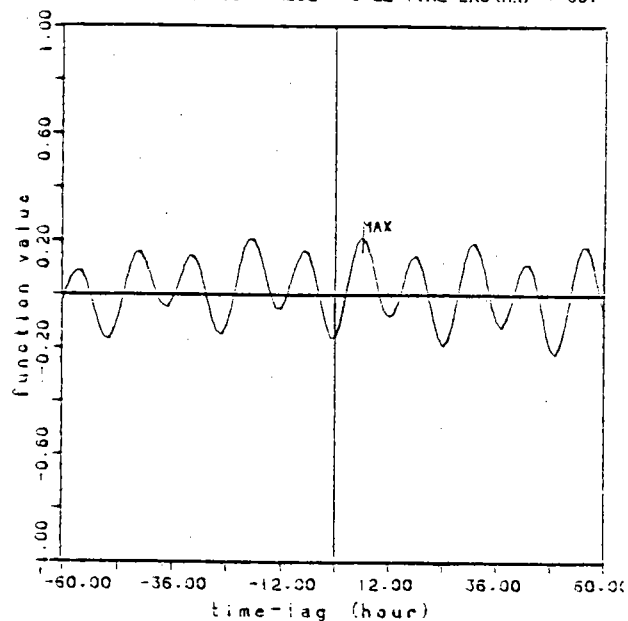
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.23 TIME LAG(HR) : --.



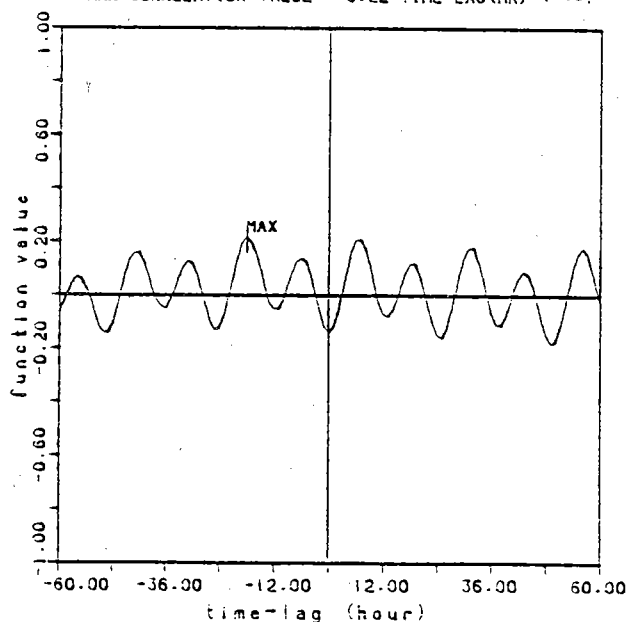
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.22 TIME LAG(HR) : 06.



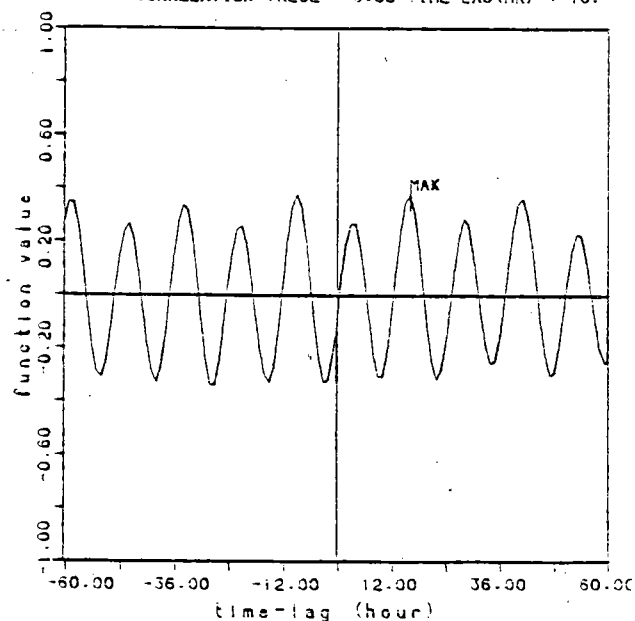
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.22 TIME LAG(HR) : --.



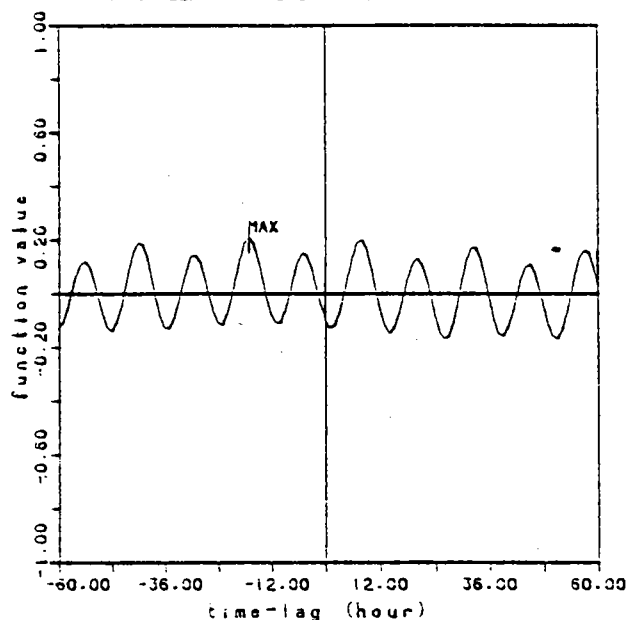
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.38 TIME LAG(HR) : 16.



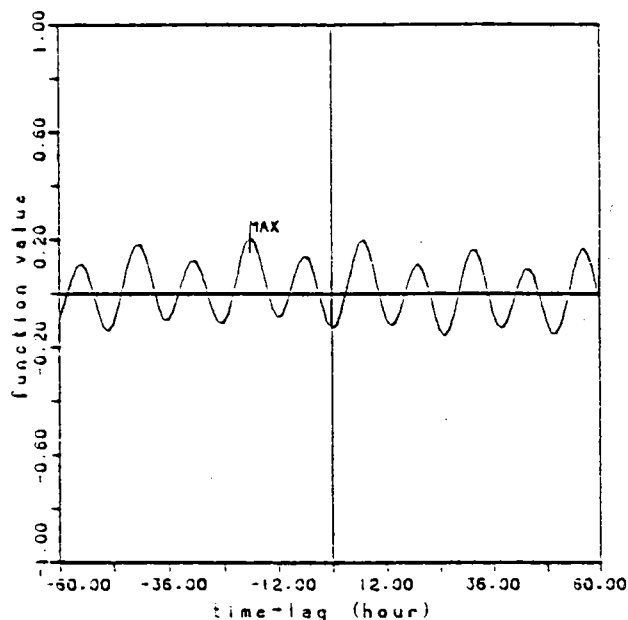
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14+0
• AREA TYPE : TAI-CHUNG HAROUR
• STATION X : XX Y : 90-01
• X : TIDAL LEVEL with Y : CURRENT E-W COM
MAX CORRELATION VALUE : 0.21 TIME LAG(HR) : **.



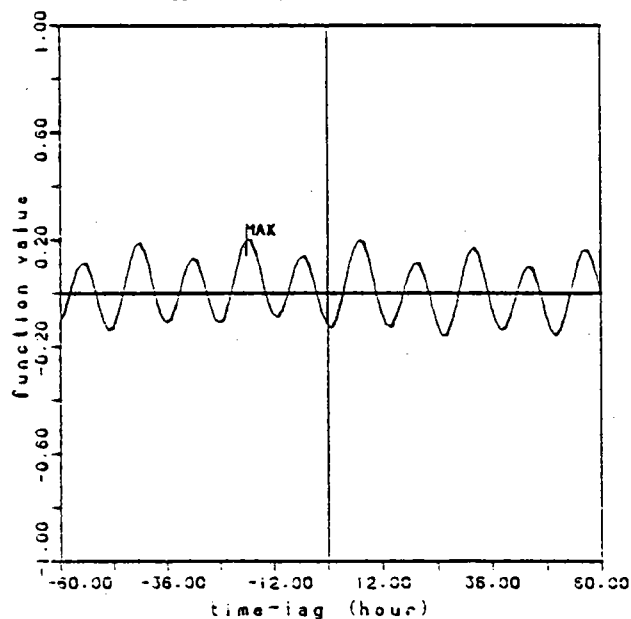
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14+0
• AREA TYPE : TAI-CHUNG HAROUR
• STATION X : XX Y : 90-01
• X : TIDAL LEVEL with Y : CURRENT N-S COM
MAX CORRELATION VALUE : 0.21 TIME LAG(HR) : **.



CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14+0
• AREA TYPE : TAI-CHUNG HAROUR
• STATION X : XX Y : 90-01
• X : TIDAL LEVEL with Y : CURRENT ALONG-S
MAX CORRELATION VALUE : 0.20 TIME LAG(HR) : **.



CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14+0
• AREA TYPE : TAI-CHUNG HAROUR
• STATION X : XX Y : 90-01
• X : TIDAL LEVEL with Y : CURRENT CROSS-S
MAX CORRELATION VALUE : 0.24 TIME LAG(HR) : 53.

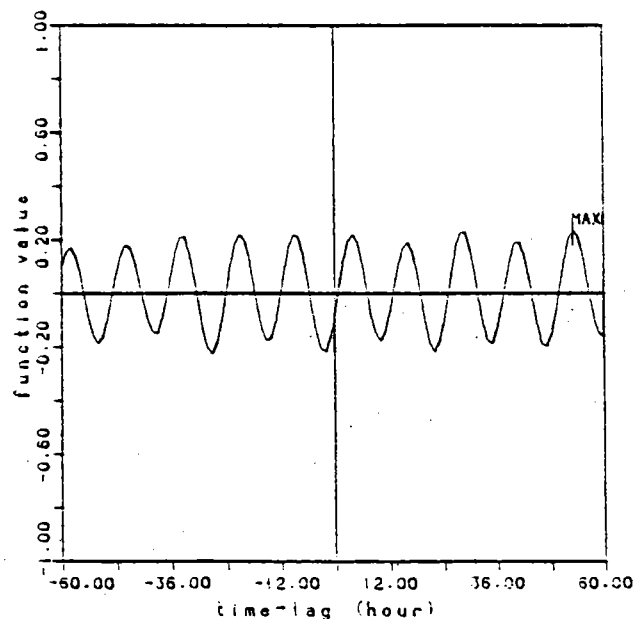
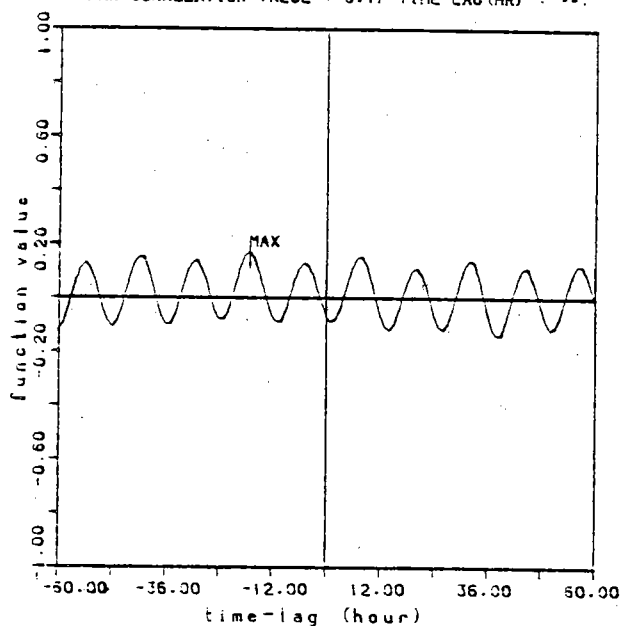


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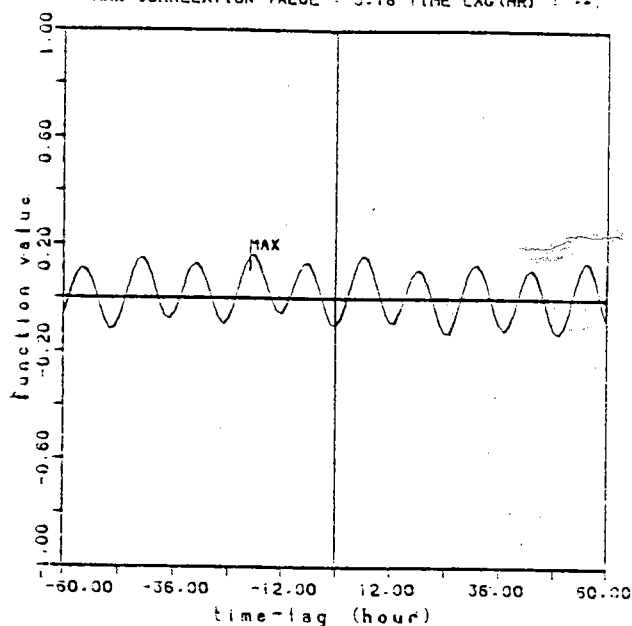
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.17 TIME LAG (HR) : --



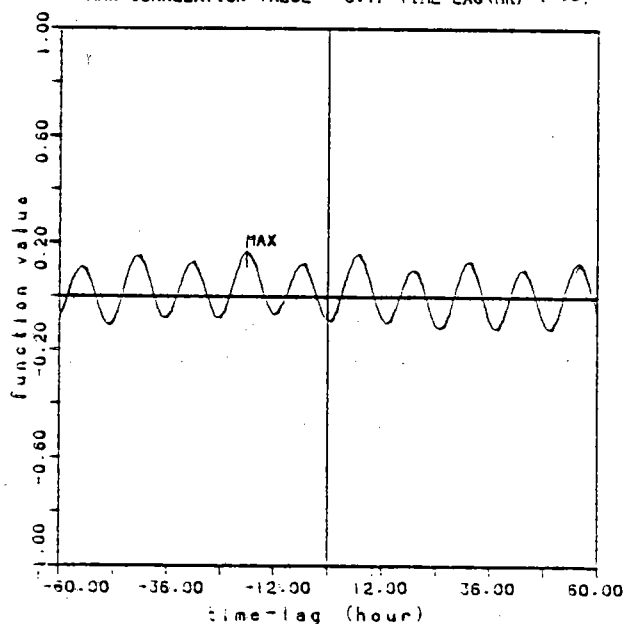
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.16 TIME LAG (HR) : --



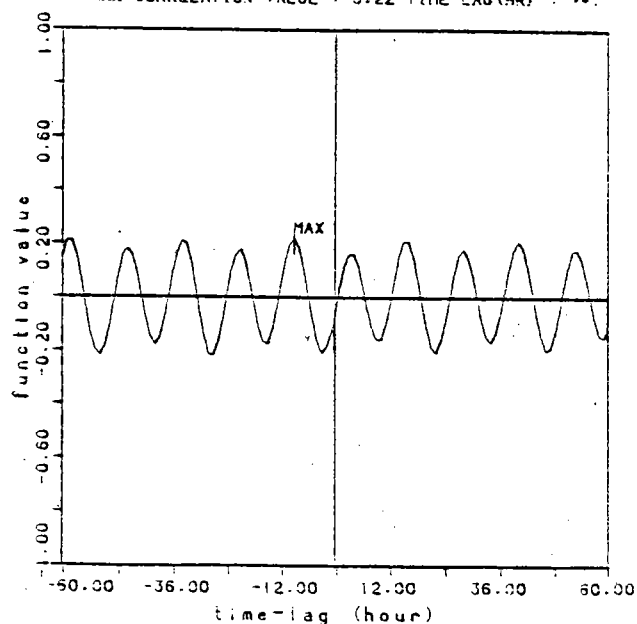
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.17 TIME LAG (HR) : --



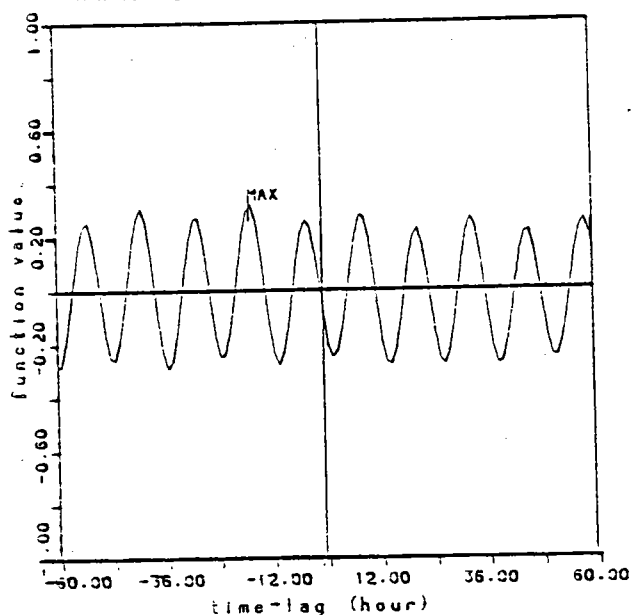
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.22 TIME LAG (HR) : --



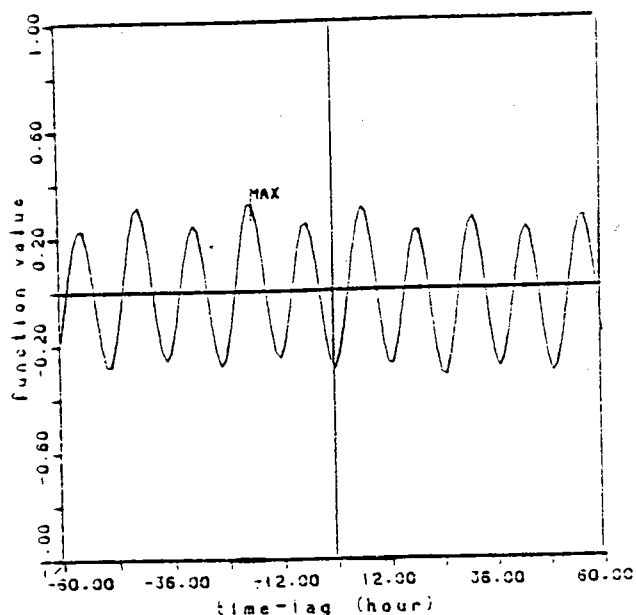
CROSS-CORRELATION FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-02
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.32 TIME LAG(HR) : --.



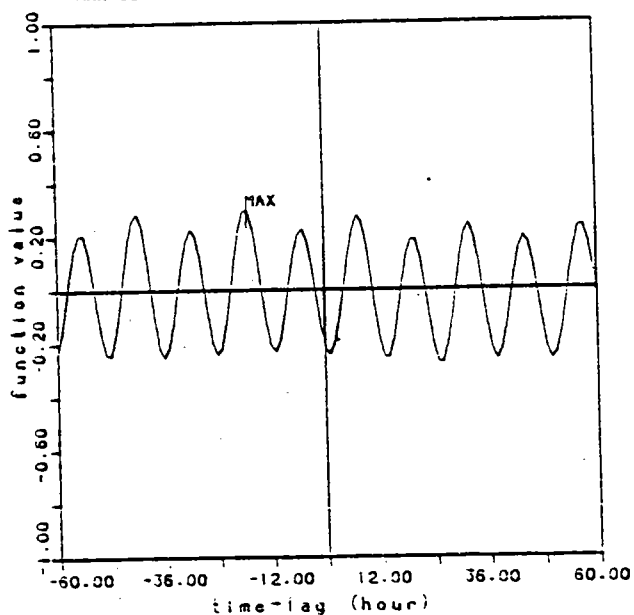
CROSS-CORRELATION FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-02
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.33 TIME LAG(HR) : --.



CROSS-CORRELATION FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-02
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.30 TIME LAG(HR) : --.



CROSS-CORRELATION FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-02
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.42 TIME LAG(HR) : --.

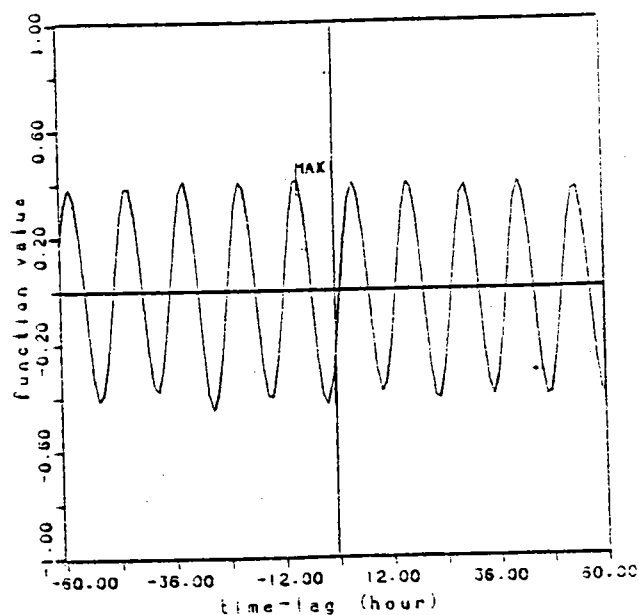
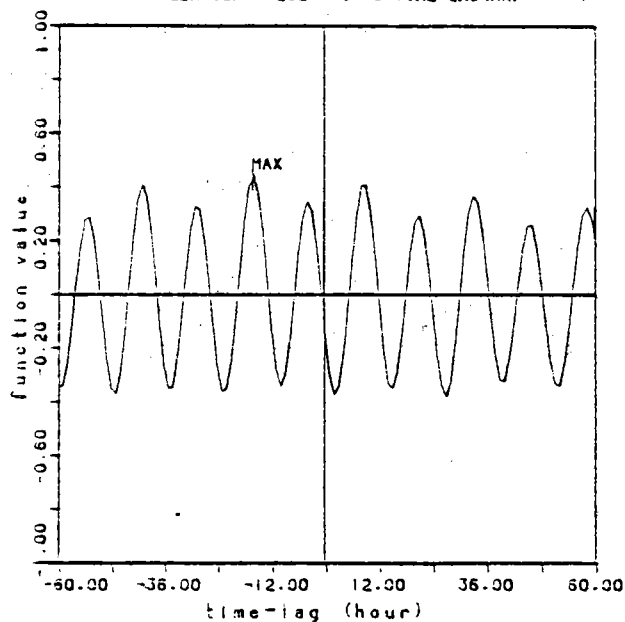


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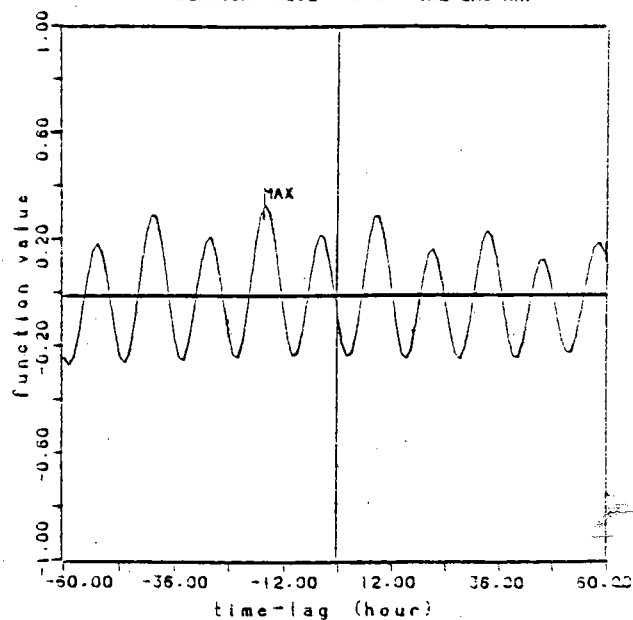
CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-03
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.45 TIME LAG (HR) : --



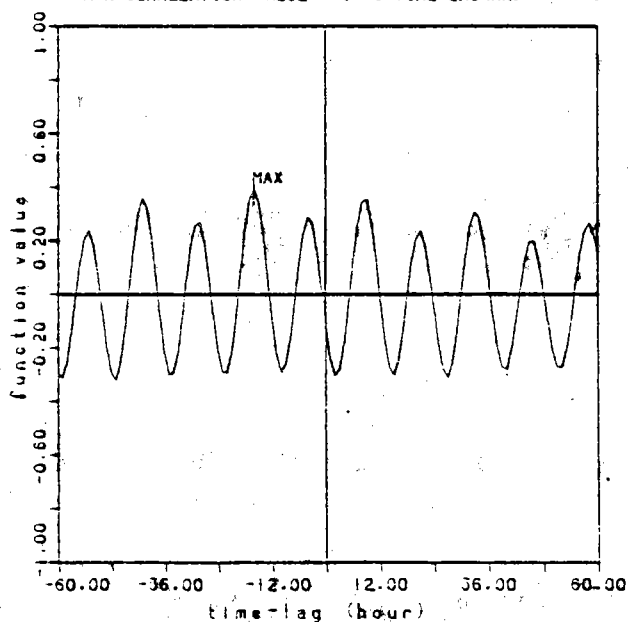
CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-03
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.34 TIME LAG (HR) : --



CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-03
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.40 TIME LAG (HR) : --



CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 30-03
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.21 TIME LAG (HR) : 27

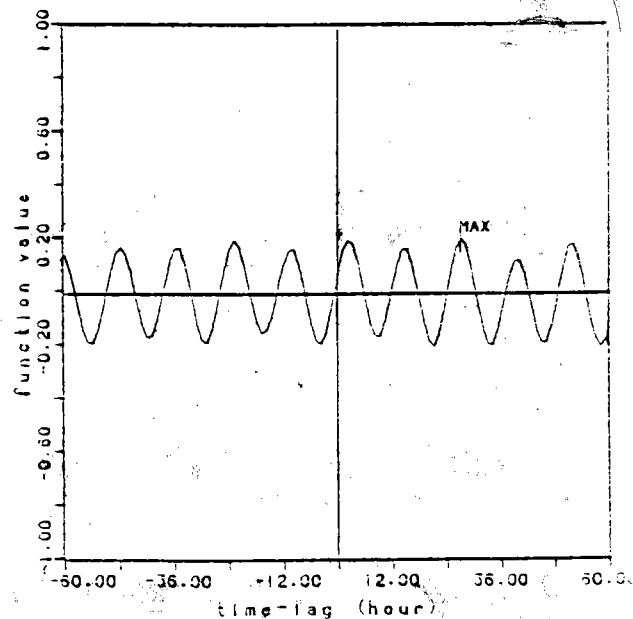
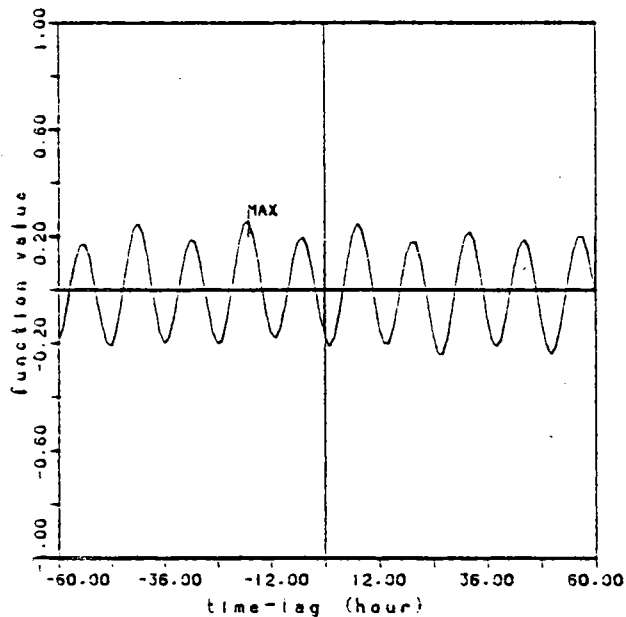


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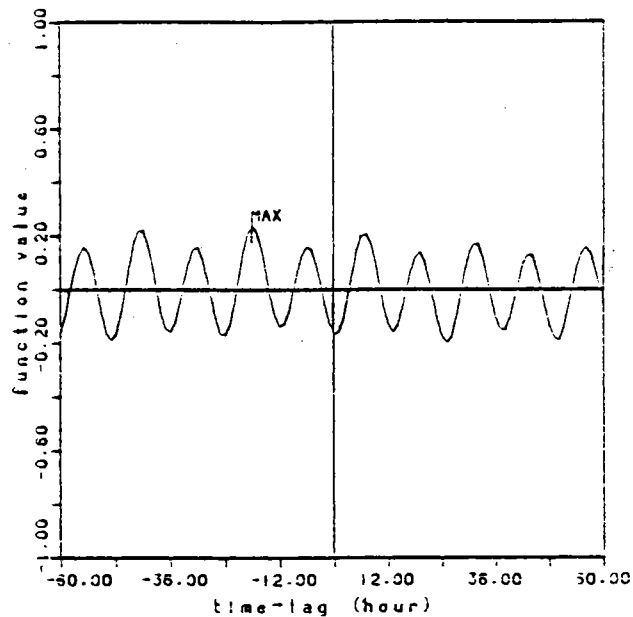
CROSS-CORRELATION FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0 -02
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.26 TIME LAG(HR) : **.



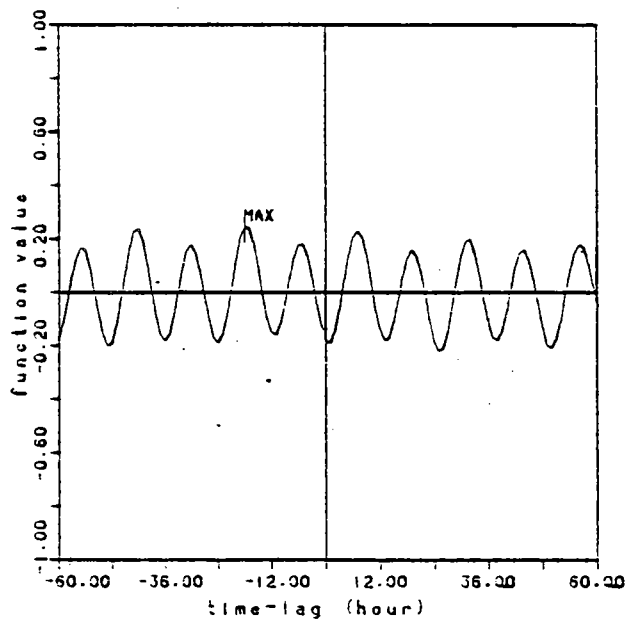
CROSS-CORRELATION FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0 -02
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.24 TIME LAG(HR) : **.



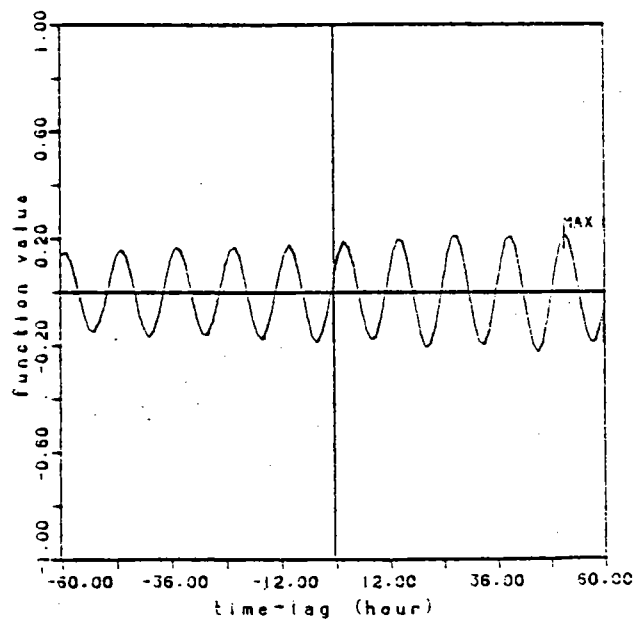
CROSS-CORRELATION FUNCTION

• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0 -02
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.25 TIME LAG(HR) : **.



CROSS-CORRELATION FUNCTION

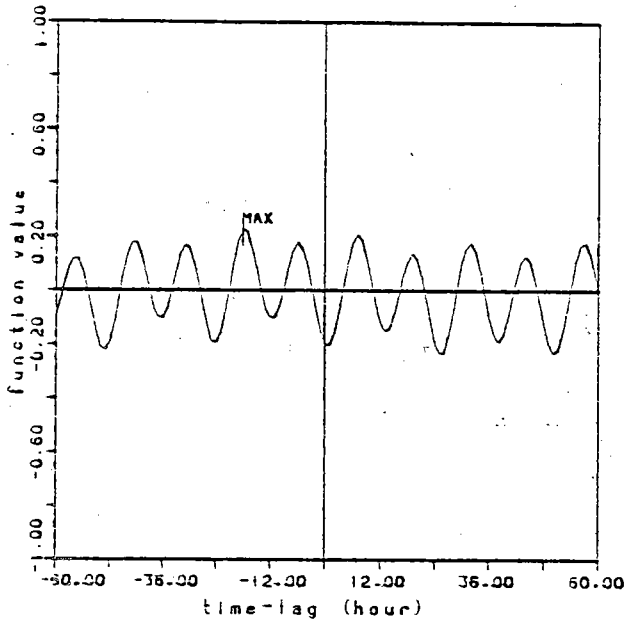
• DATE : 86/03/08/10: 0-86/04/03/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 0 -02
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.22 TIME LAG(HR) : 51.





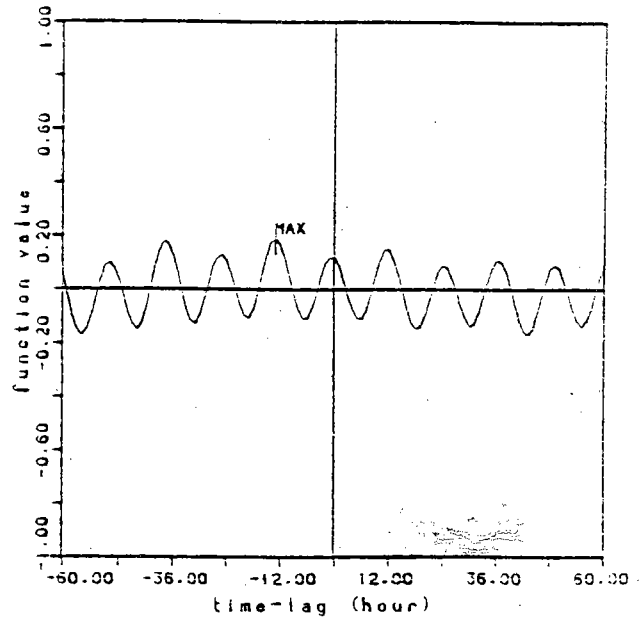
CROSS-CORRELATION FUNCTION

- DATE : 85/12/27/13: 0-86/01/18/11:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : E -01
- X : TIDAL LEVEL with Y : CURRENT E-W COM
- MAX CORRELATION VALUE : 0.23 TIME LAG(HR) : --.



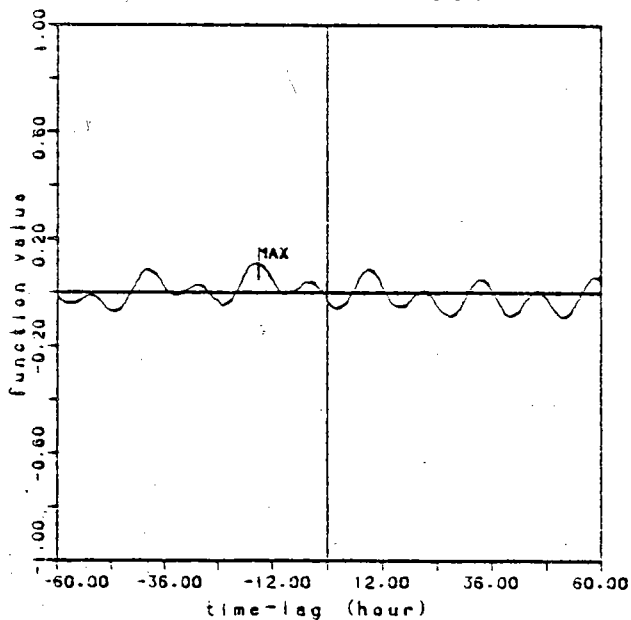
CROSS-CORRELATION FUNCTION

- DATE : 85/12/27/13: 0-86/01/18/11:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : E -01
- X : TIDAL LEVEL with Y : CURRENT N-S COM
- MAX CORRELATION VALUE : 0.19 TIME LAG(HR) : --.



CROSS-CORRELATION FUNCTION

- DATE : 85/12/27/13: 0-86/01/18/11:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : E -01
- X : TIDAL LEVEL with Y : CURRENT ALONG-S
- MAX CORRELATION VALUE : 0.11 TIME LAG(HR) : --.



CROSS-CORRELATION FUNCTION

- DATE : 85/12/27/13: 0-86/01/18/11:0
- AREA TYPE : TAI-CHUNG HAROUR
- STATION X : XX Y : E -01
- X : TIDAL LEVEL with Y : CURRENT CROSS-S
- MAX CORRELATION VALUE : 0.52 TIME LAG(HR) : 25.

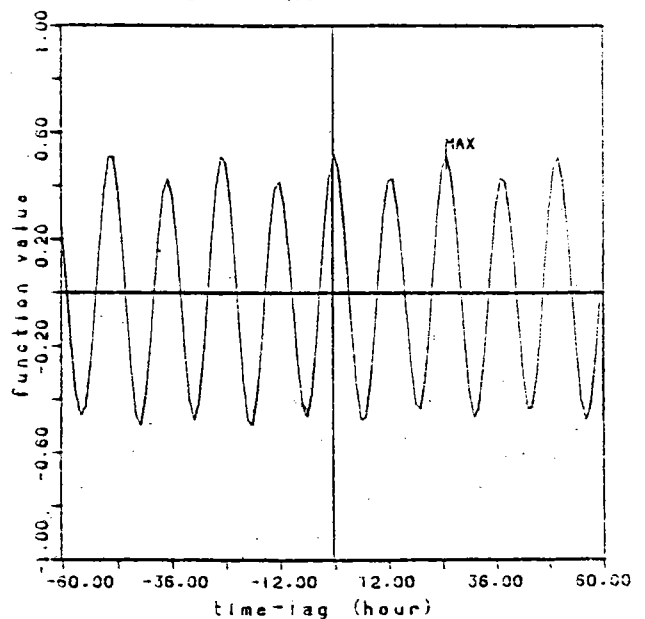
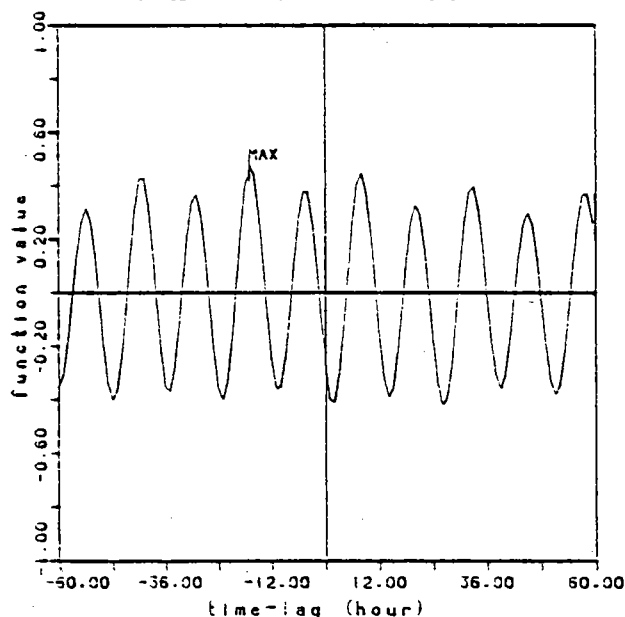


圖 VII - 8

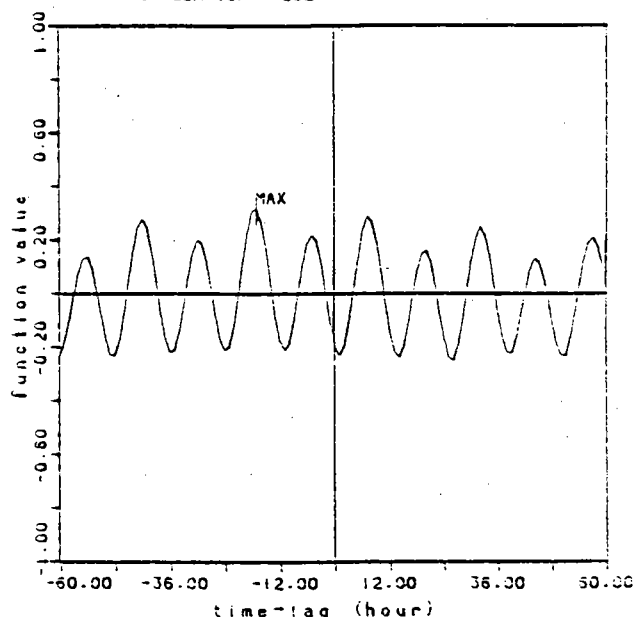
CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : S-01
 • X : TIDAL LEVEL with Y : CURRENT E-W CCM
 MAX CORRELATION VALUE : 0.48 TIME LAG (HR) : **



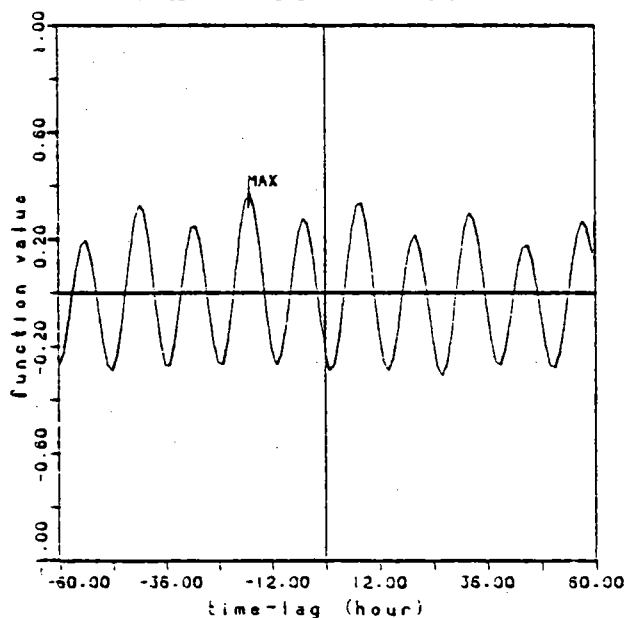
CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : S-01
 • X : TIDAL LEVEL with Y : CURRENT N-S CCM
 MAX CORRELATION VALUE : 0.32 TIME LAG (HR) : **



CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : S-01
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.38 TIME LAG (HR) : **



CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : S-01
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.17 TIME LAG (HR) : **

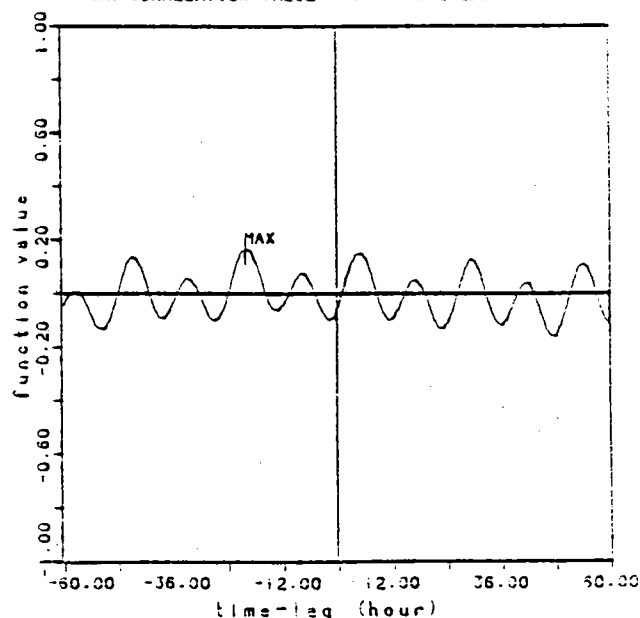
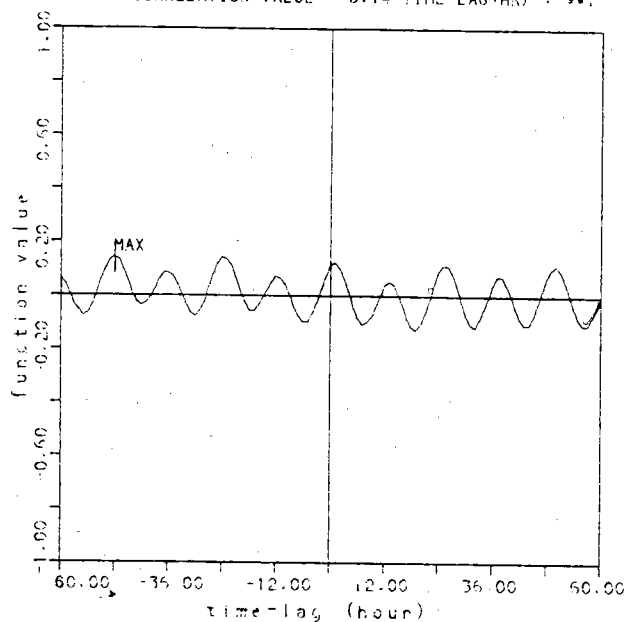


圖 VII - 9

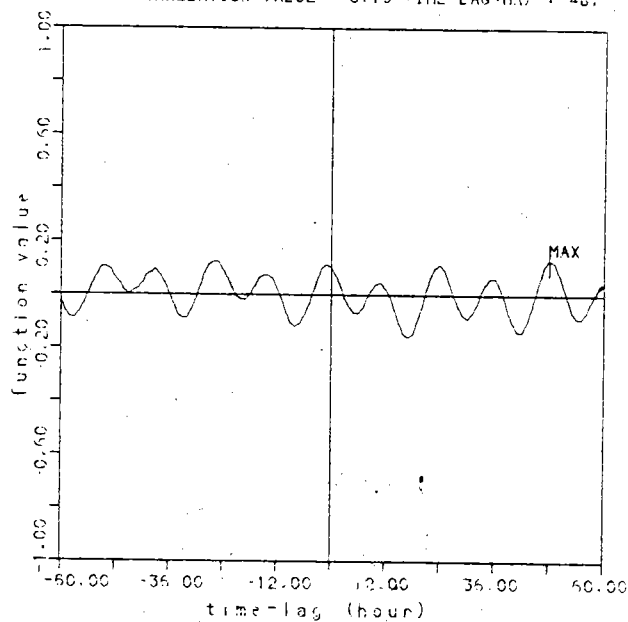
CROSS-CORRELATION FUNCTION

• DATE : 86/12/19/11: 0-87/ 1/ 6/ 2:
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : BU
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.14 TIME LAG (HR) : 22.



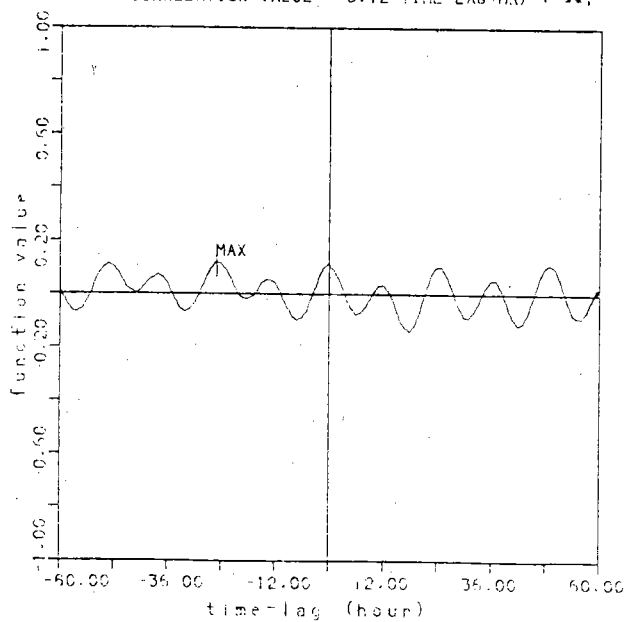
CROSS-CORRELATION FUNCTION

• DATE : 86/12/19/11: 0-87/ 1/ 6/ 2:
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : BU
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.13 TIME LAG (HR) : 46.



CROSS-CORRELATION FUNCTION

• DATE : 86/12/19/11: 0-87/ 1/ 6/ 2:
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : BU
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.12 TIME LAG (HR) : 22.



CROSS-CORRELATION FUNCTION

• DATE : 86/12/19/11: 0-87/ 1/ 6/ 2:
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : BU
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.24 TIME LAG (HR) : 33.

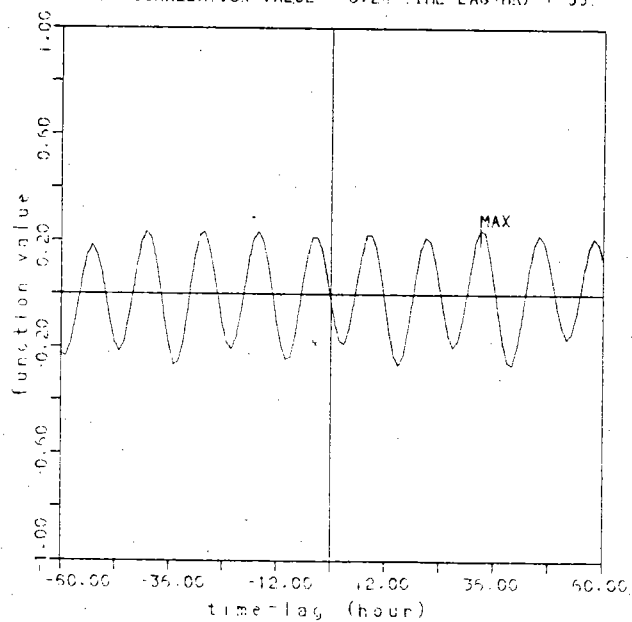
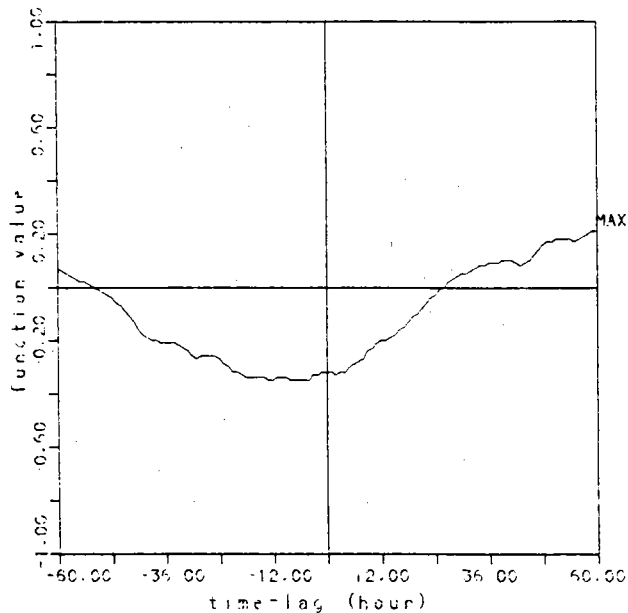


圖 VII - 10

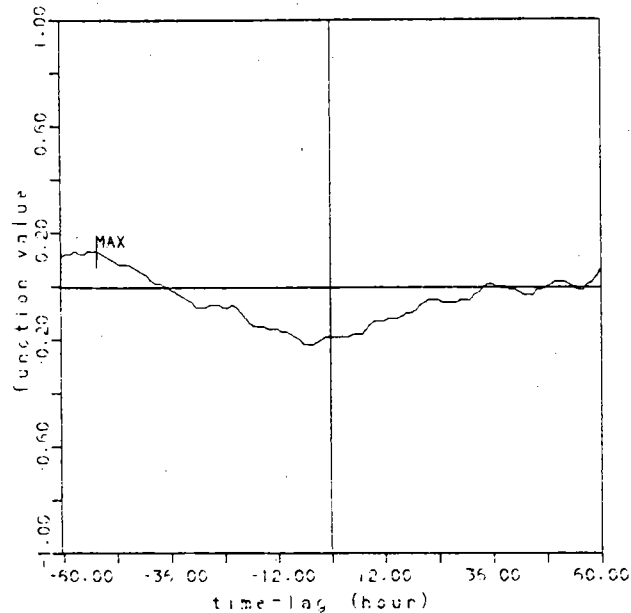
CROSS-CORRELATION FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : C-
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.21 TIME LAG(HR) : 60.



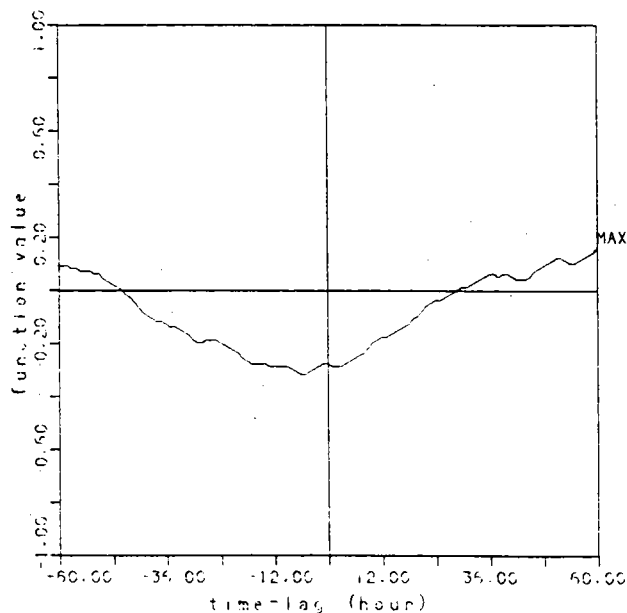
CROSS-CORRELATION FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : C-
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.13 TIME LAG(HR) : 0.



CROSS-CORRELATION FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : C-
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.16 TIME LAG(HR) : 60.



CROSS-CORRELATION FUNCTION

• DATE : 67/03/06/12: 0-67/03/24/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : C-
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.36 TIME LAG(HR) : 0.

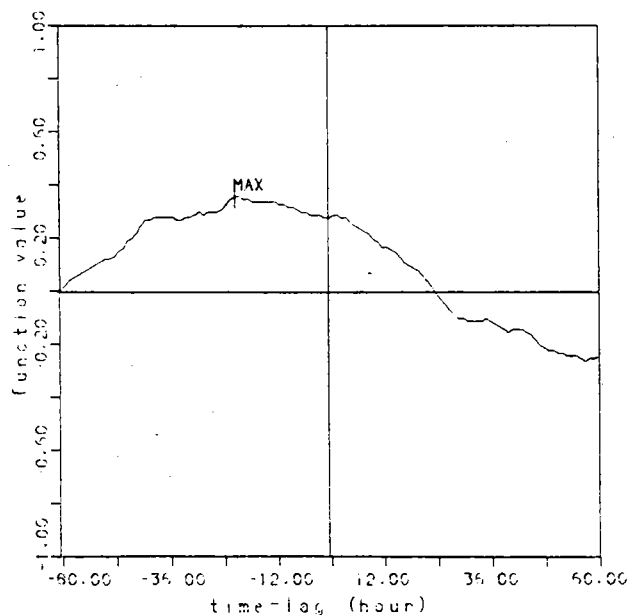
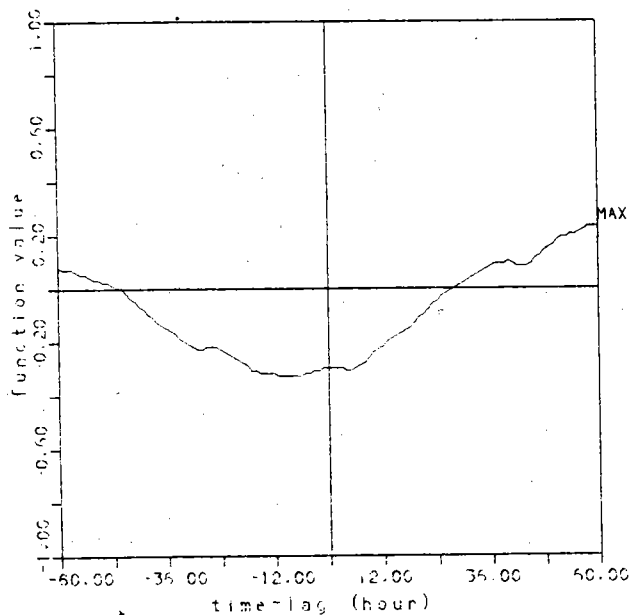


圖 VII - 11

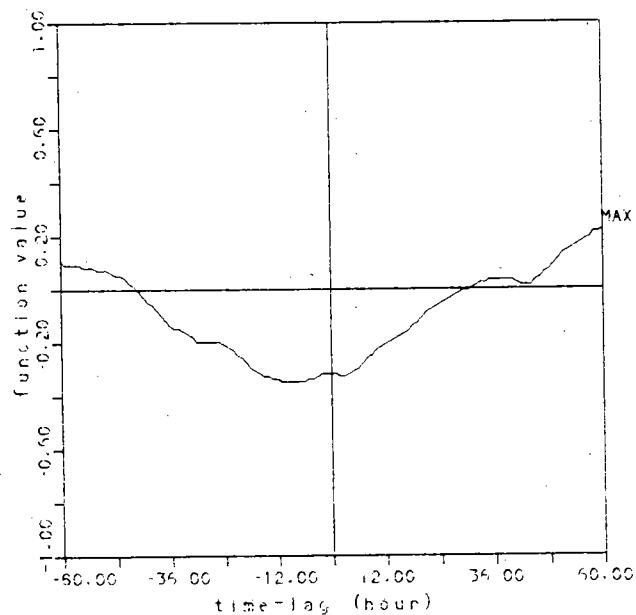
CROSS-CORRELATION FUNCTION

• DATE : 67/03/05/12: 0-67/03/24/00:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : H-
 • X : TIDAL LEVEL with Y : CURRENT E-W COM
 MAX CORRELATION VALUE : 0.23 TIME LAG (HR) : 60.



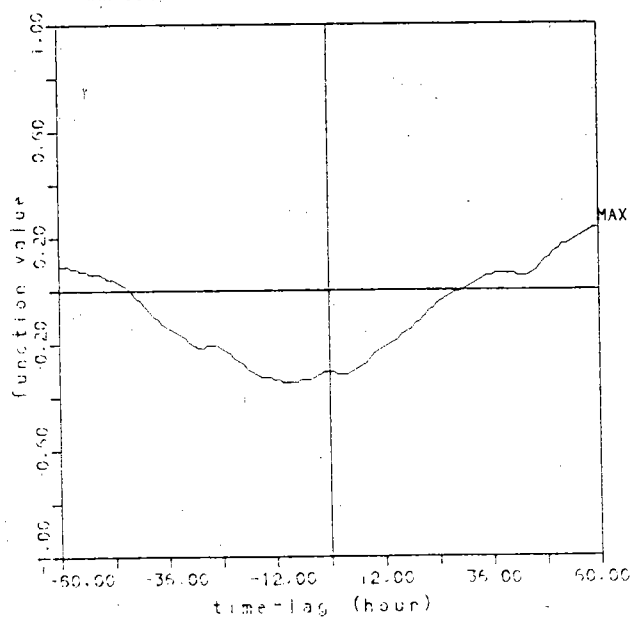
CROSS-CORRELATION FUNCTION

• DATE : 67/03/05/12: 0-67/03/24/00:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : H-
 • X : TIDAL LEVEL with Y : CURRENT N-S COM
 MAX CORRELATION VALUE : 0.22 TIME LAG (HR) : 60.



CROSS-CORRELATION FUNCTION

• DATE : 67/03/05/12: 0-67/03/24/00:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : H-
 • X : TIDAL LEVEL with Y : CURRENT ALONG-S
 MAX CORRELATION VALUE : 0.23 TIME LAG (HR) : 60.



CROSS-CORRELATION FUNCTION

• DATE : 67/03/05/12: 0-67/03/24/00:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : H-
 • X : TIDAL LEVEL with Y : CURRENT CROSS-S
 MAX CORRELATION VALUE : 0.16 TIME LAG (HR) : 07.

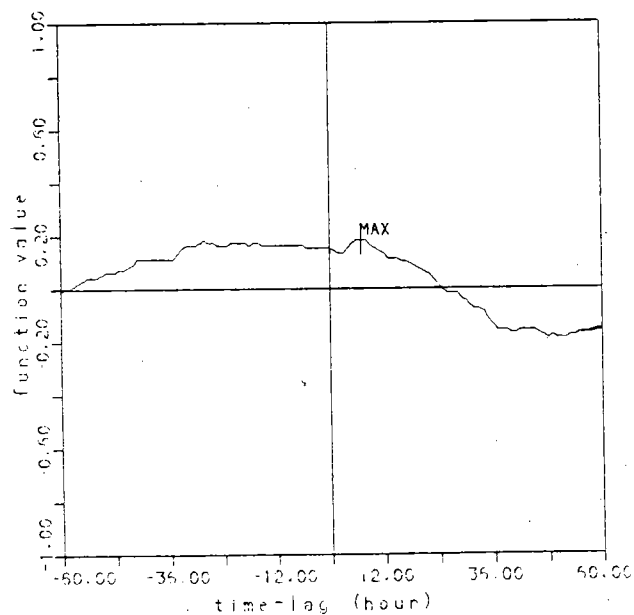


圖 VII - 12

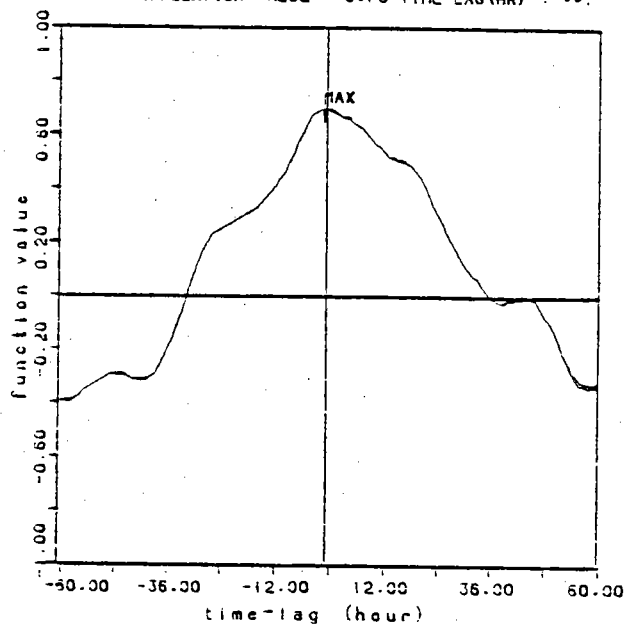
附 圖 VIII

風 速、潮 位 與 流 速 相 關 圖 及 風 速、流 速 能 譜 圖

圖 號	時 間	測 站	備 註
VIII - 1	86/01/16-01/29	BU	
VIII - 2	86/01/16-01/29	BD	
VIII - 3	86/02/03-02/25	BU	
VIII - 4	86/02/03-02/25	BD	
VIII - 5	86/03/07-04/03	BD	
VIII - 6	86/04/04-04/23	BD	
VIII - 7	86/03/08-04/03	D	
VIII - 8	85/12/27-86/01/18	E	
VIII - 9	86/04/08-04/23	S	
VIII - 10	87/03/06-03/24	G	
VIII - 11	87/03/05-03/24	H	

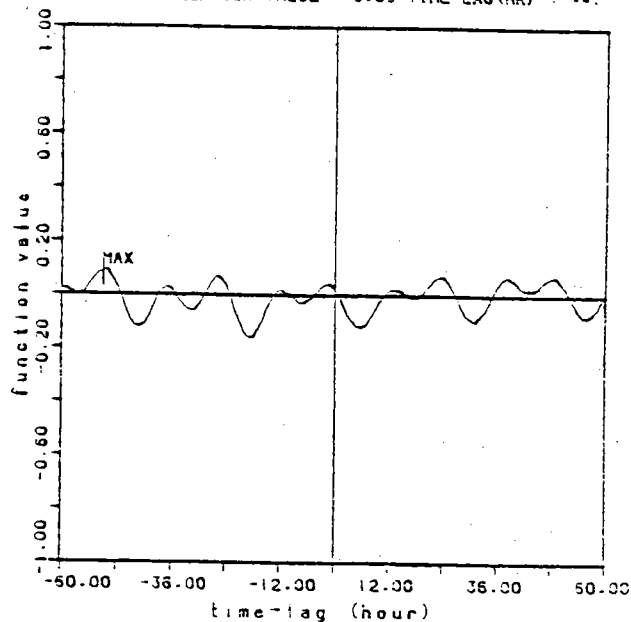
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.70 TIME LAG(HR) : ..



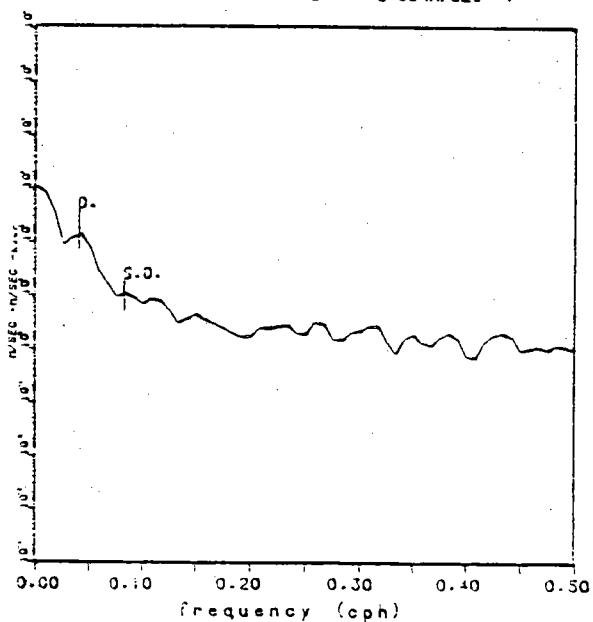
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : 9U-01
 • X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.09 TIME LAG(HR) : ..



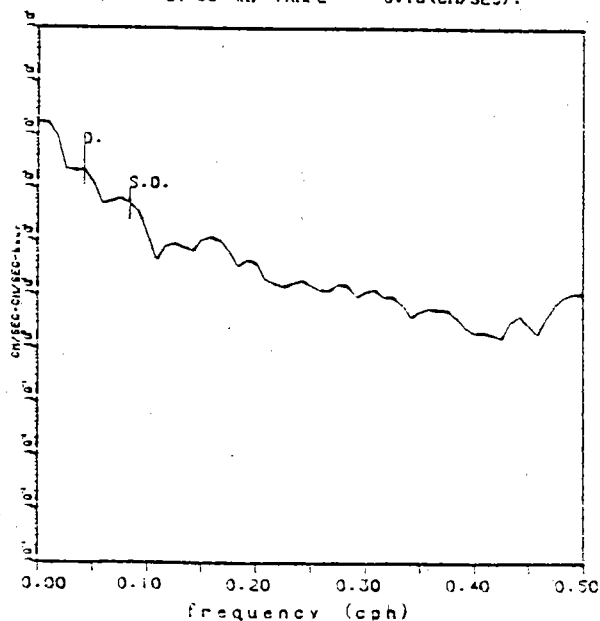
SPIRAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) ,AMPL = 0.57 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 2.05 (M/SEC)



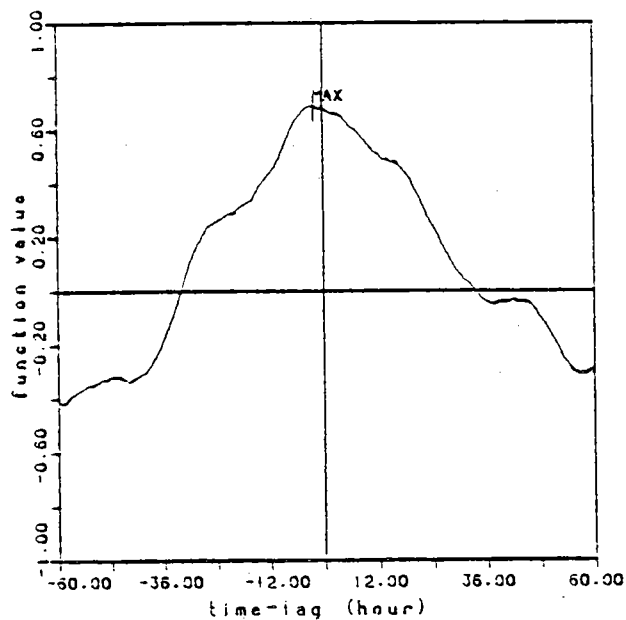
SPIRAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : 9U-01
 • DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) ,AMPL = 3.97 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 8.13 (CM/SEC)



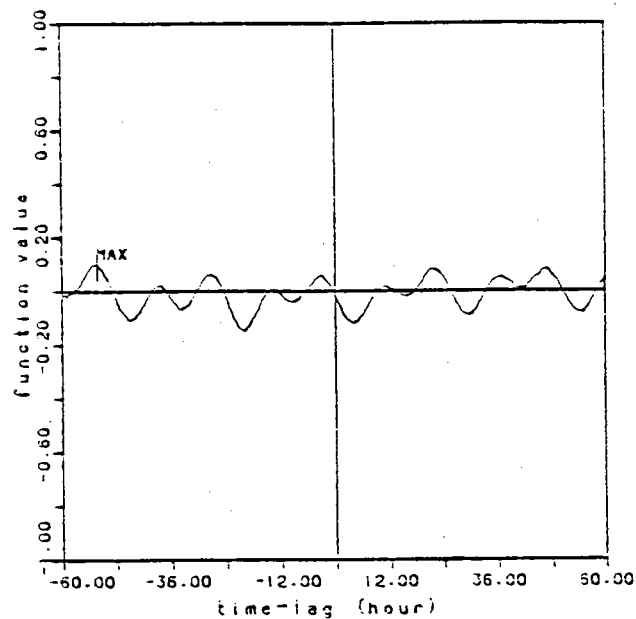
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-01
 • X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.69 TIME LAG(HR) : --.



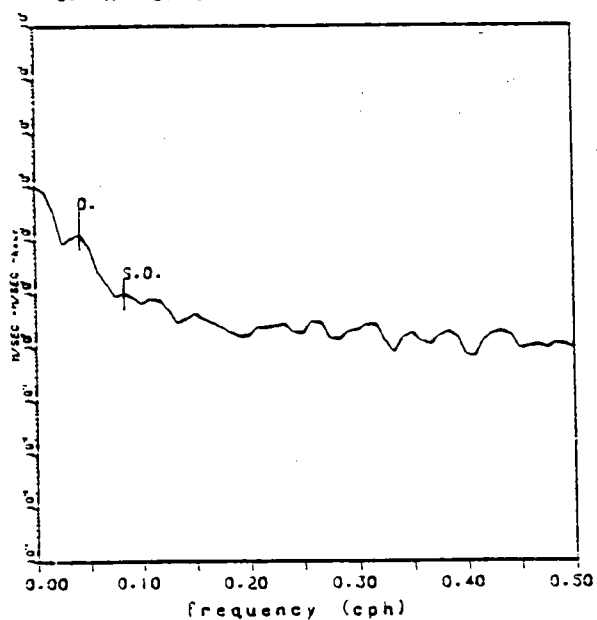
CROSS-CORRELATION FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.10 TIME LAG(HR) : --.



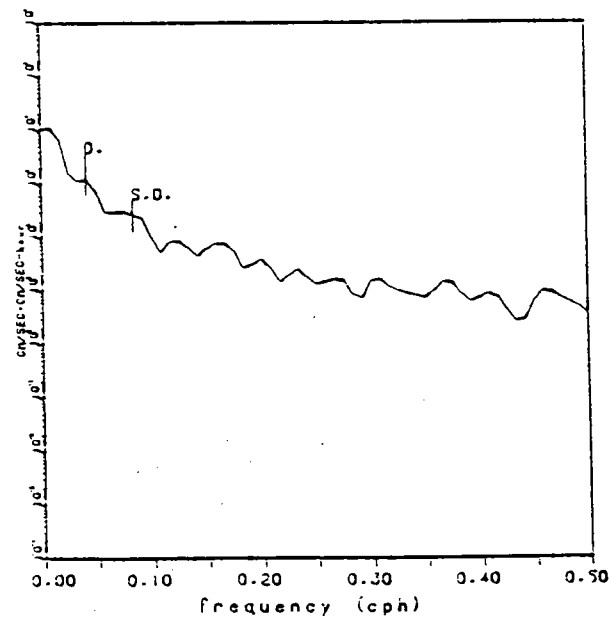
SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) .AMPL = 0.57 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 2.05 (M/SEC).



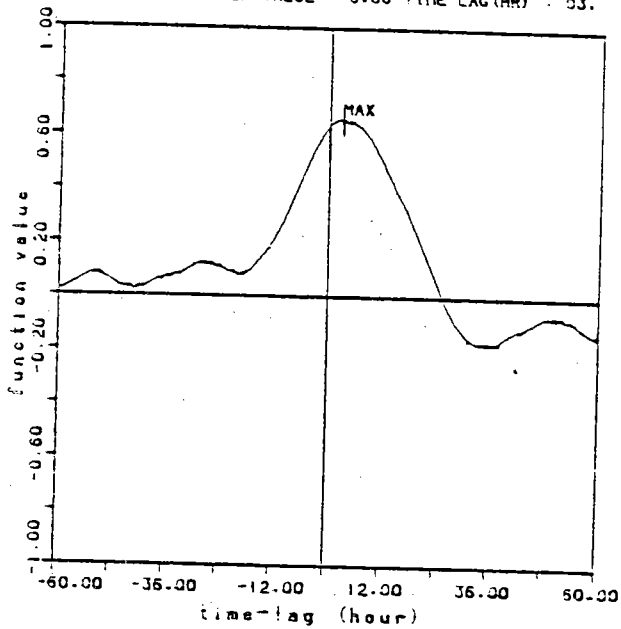
SPTAL DENSITY FUNCTION

• DATE : 86/01/16/15: 0-86/01/29/19:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : 90-01
 • DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) .AMPL = 2.85 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 5.13 (CM/SEC).



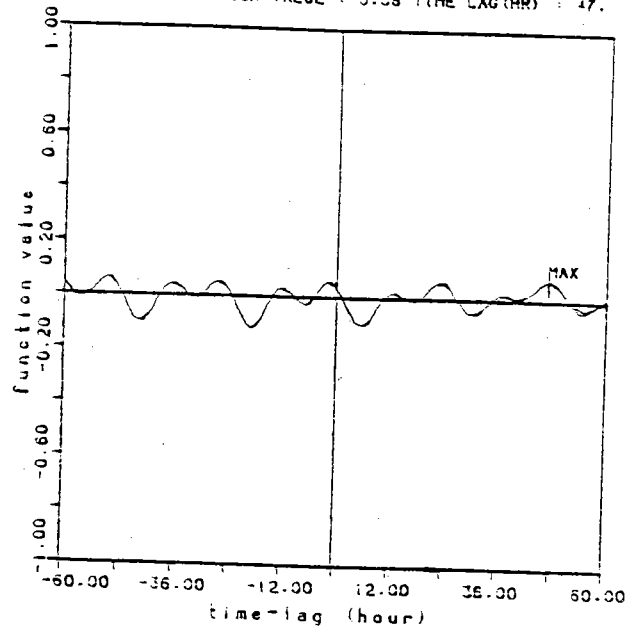
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : BU-01
 • X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.66 TIME LAG (HR) : 03.



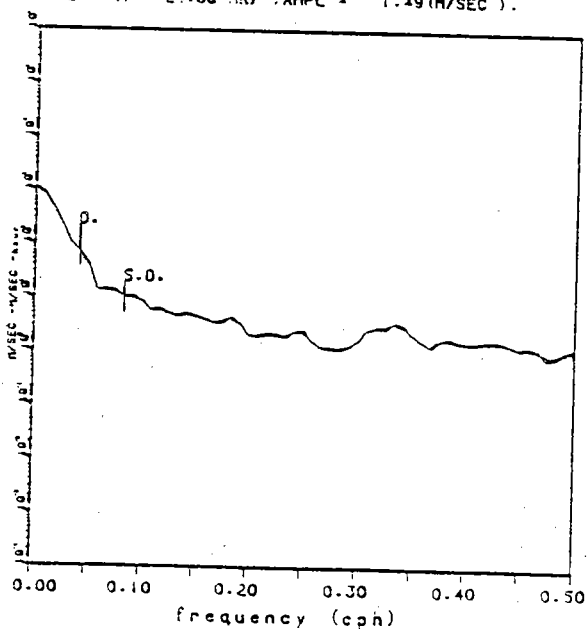
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : BU-01
 • X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.08 TIME LAG (HR) : 47.



SPECTRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) : AMPL = 0.56 (M/SEC)
 D. (T = 24.00 HR) : AMPL = 1.49 (M/SEC).



SPECTRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : BU-01
 • DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) : AMPL = 5.08 (CM/SEC)
 D. (T = 24.00 HR) : AMPL = 8.27 (CM/SEC).

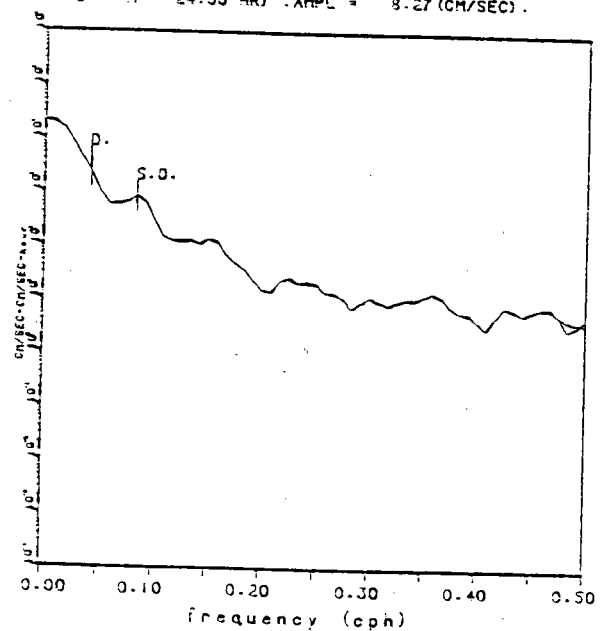
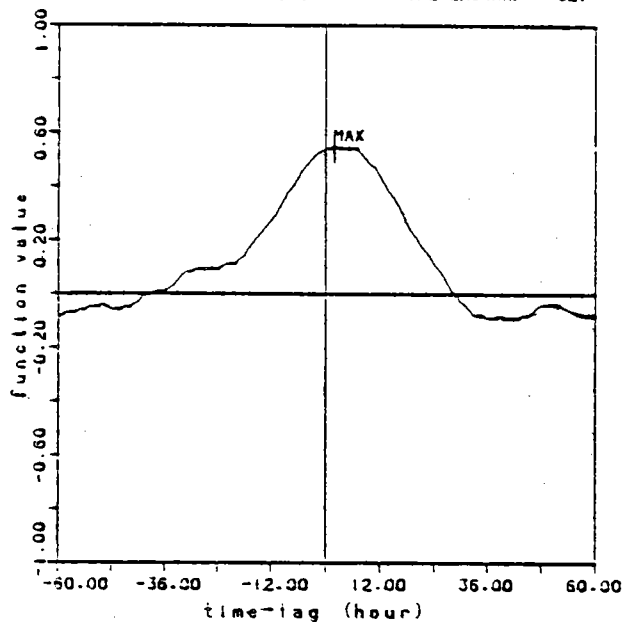


圖 VIII - 3

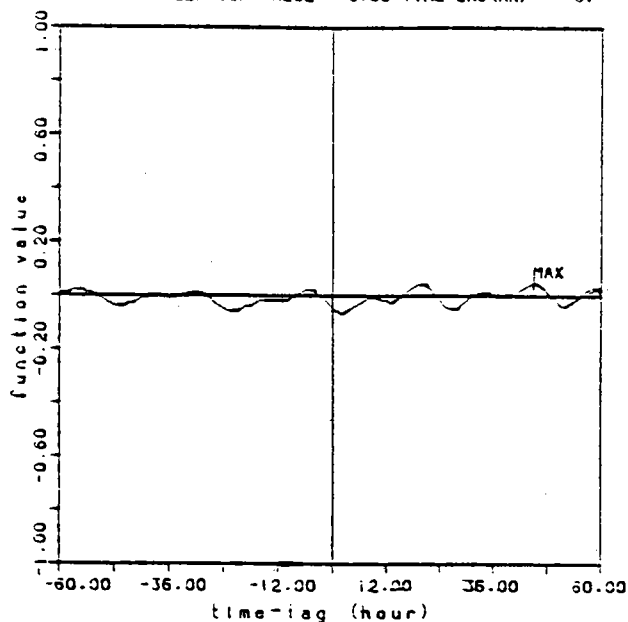
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-01
 • X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.55 (TIME LAG(HR)) : 02.



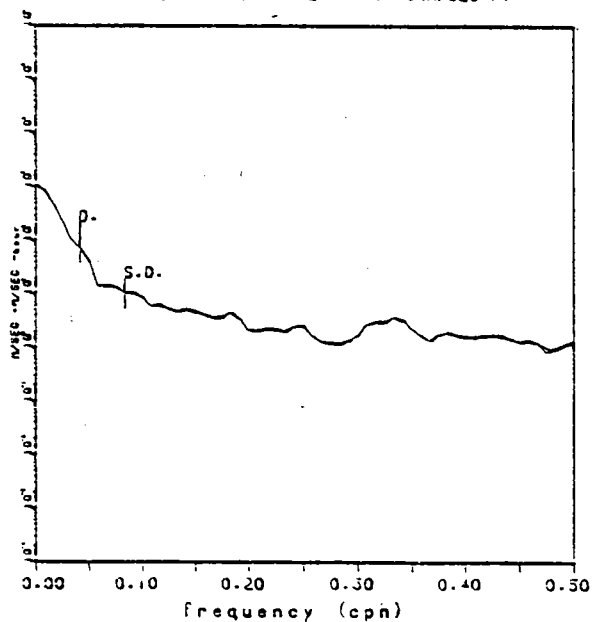
CROSS-CORRELATION FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-01
 • X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.05 (TIME LAG(HR)) : 45.



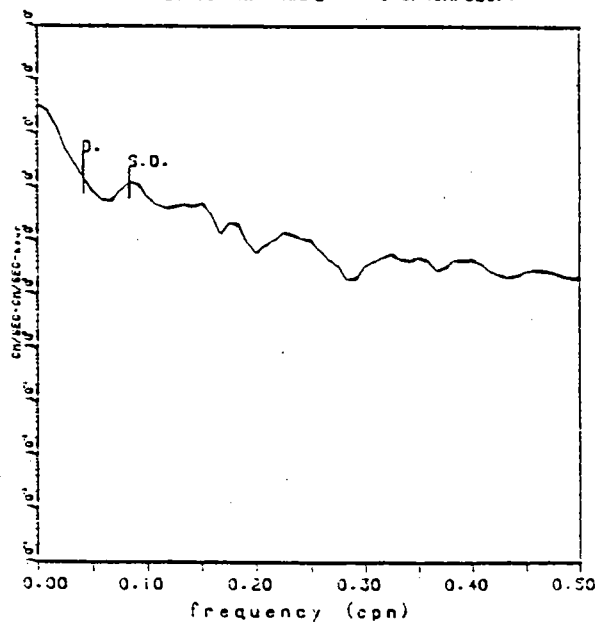
SPECTRAL DENSITY FUNCTION

• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) .AMPL = 0.56 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.49 (M/SEC).



SPECTRAL DENSITY FUNCTION

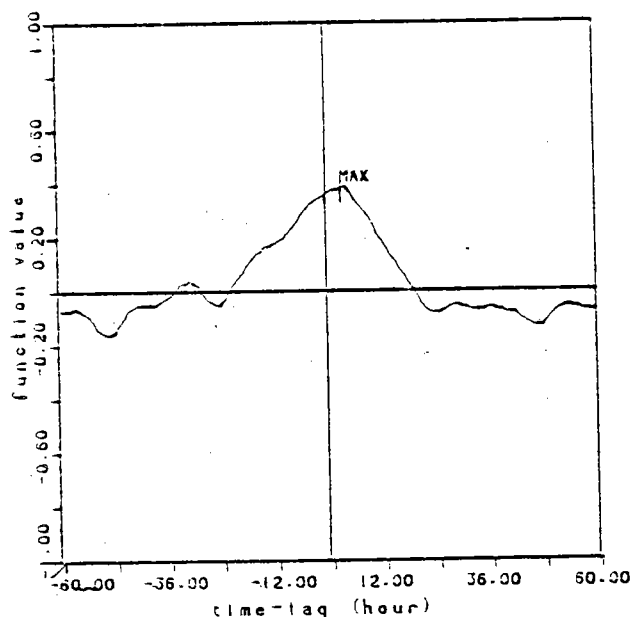
• DATE : 86/02/03/09: 0-86/02/25/14:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : 90-01
 • DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) .AMPL = 6.19 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 6.67 (CM/SEC).



圖VIII - 4

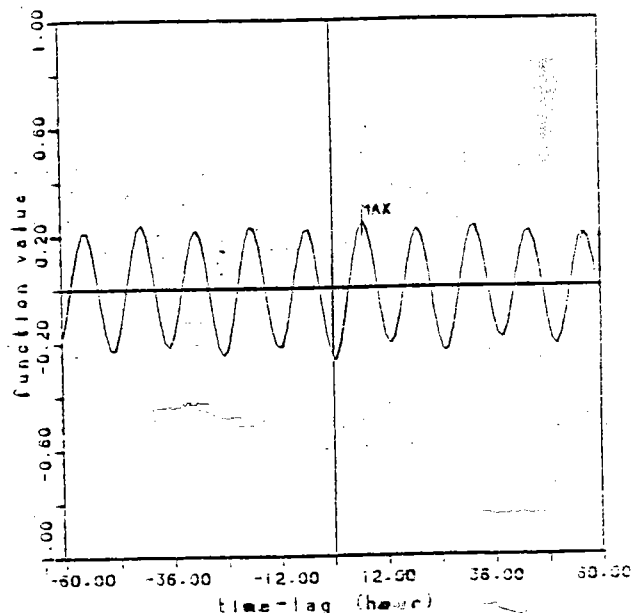
CROSS-CORRELATION FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 30-02
 • X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.39 TIME LAG (HR) : 03.



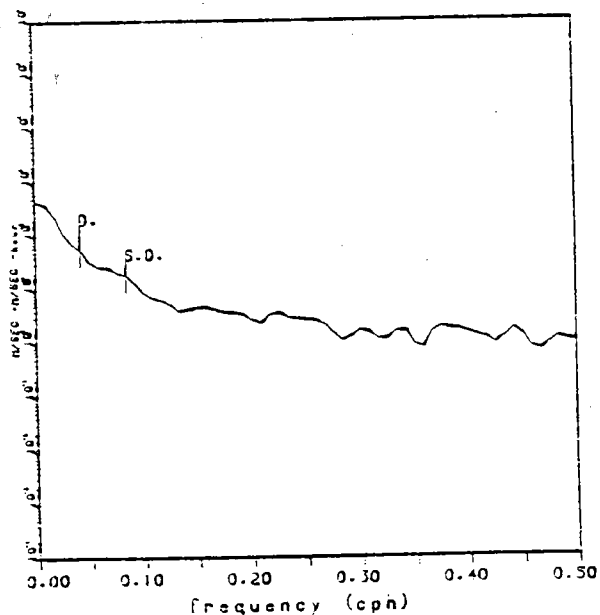
CROSS-CORRELATION FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 30-02
 • X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.25 TIME LAG (HR) : 07.



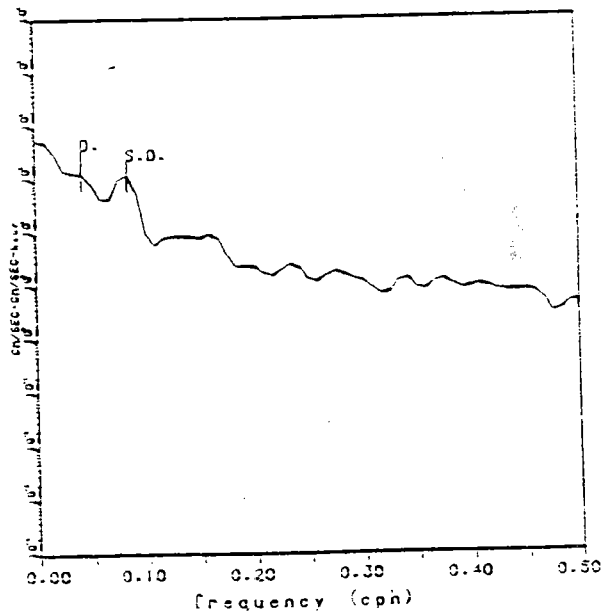
SPIRAL DENSITY FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) : AMPL = 0.75 (M/SEC)
 D. (T = 24.00 HR) : AMPL = 1.29 (M/SEC).



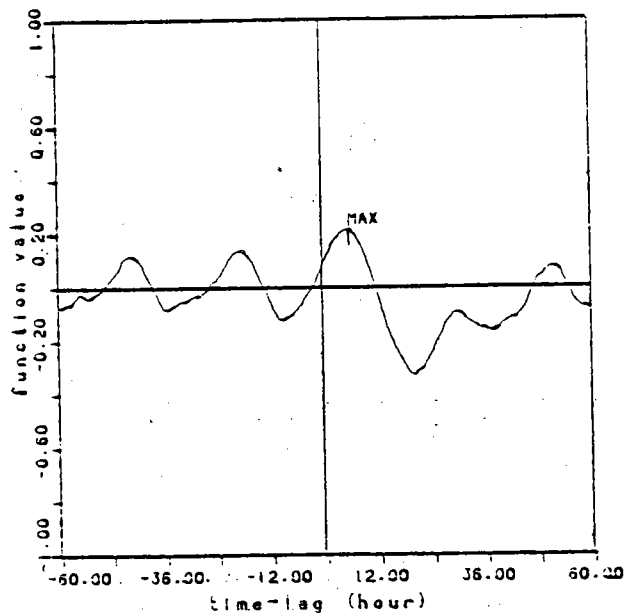
SPIRAL DENSITY FUNCTION

• DATE : 86/03/07/13: 0-86/04/03/13:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : 30-02
 • DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) : AMPL = 5.16 (CM/SEC)
 D. (T = 24.00 HR) : AMPL = 5.21 (CM/SEC).



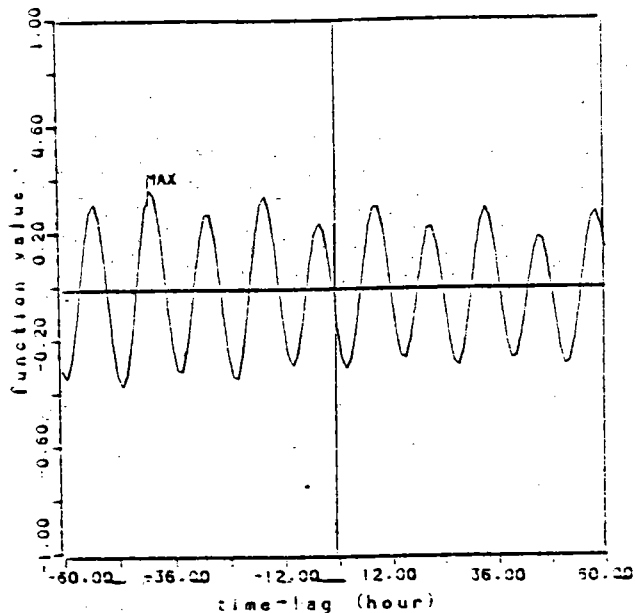
CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-03
 • X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.22 TIME LAG (HR) : 06.



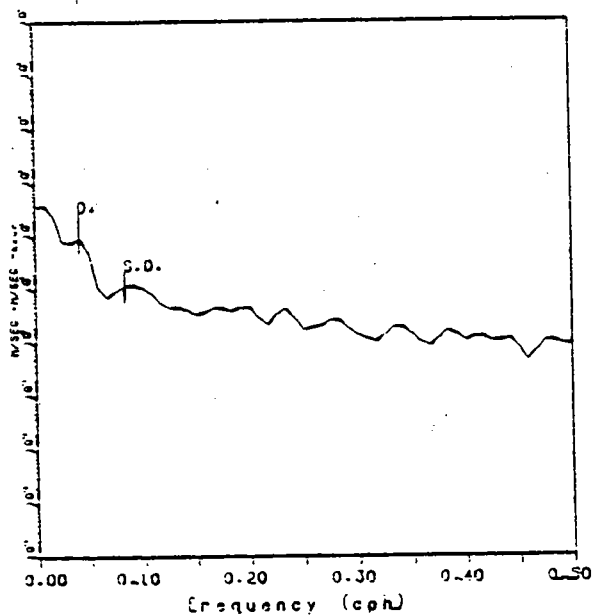
CROSS-CORRELATION FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION X : XX Y : 90-03
 • X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.37 TIME LAG (HR) : --.



SPTAL DENSITY FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : XX
 • DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) .AMPL = 0.82 (M/SEC)
 D. (T = 24.00 HR) .AMPL = 1.71 (M/SEC).



SPTAL DENSITY FUNCTION

• DATE : 86/04/04/13: 0-86/04/23/11:0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : 90-03
 • DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) .AMPL = 6.63 (CM/SEC)
 D. (T = 24.00 HR) .AMPL = 7.95 (CM/SEC).

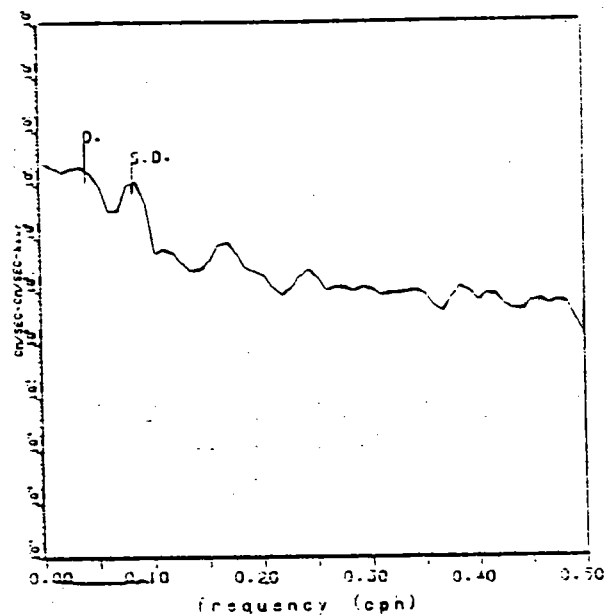
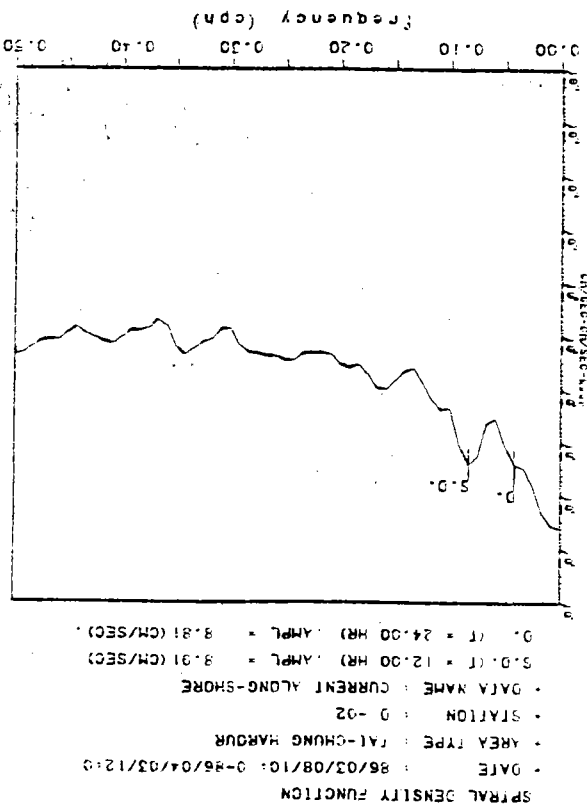
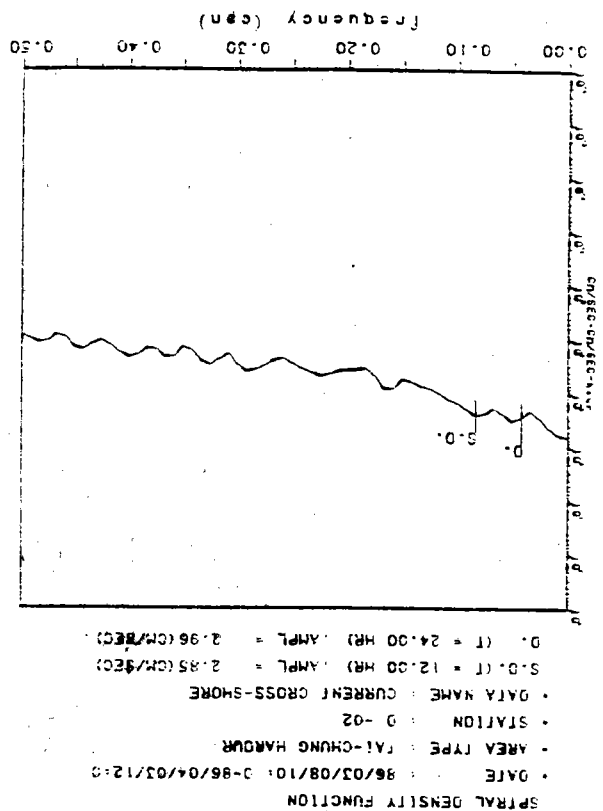
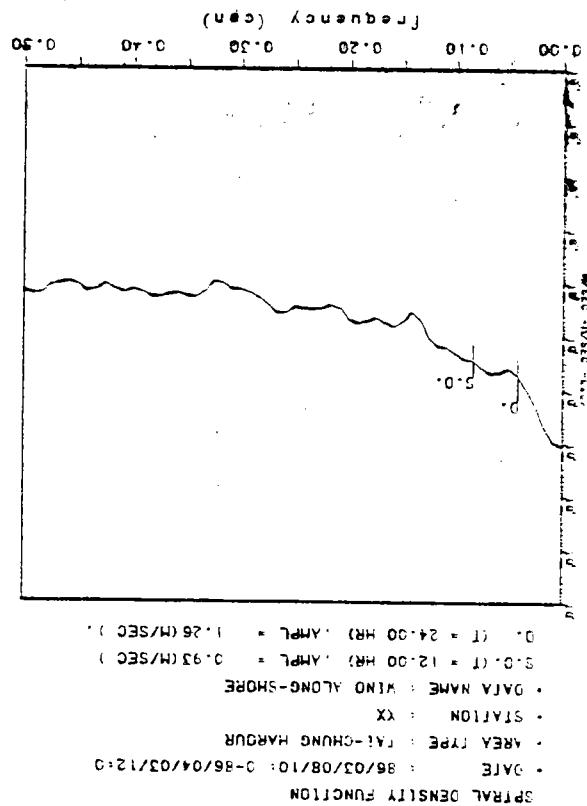
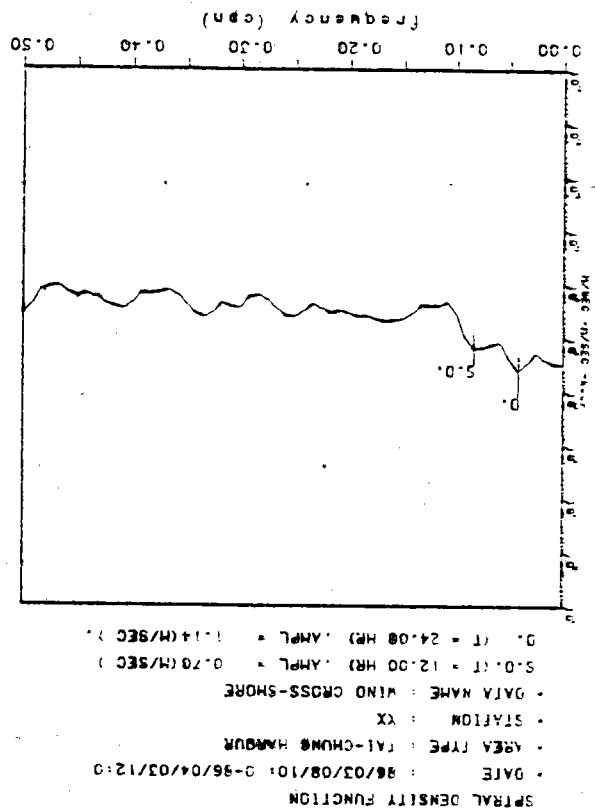
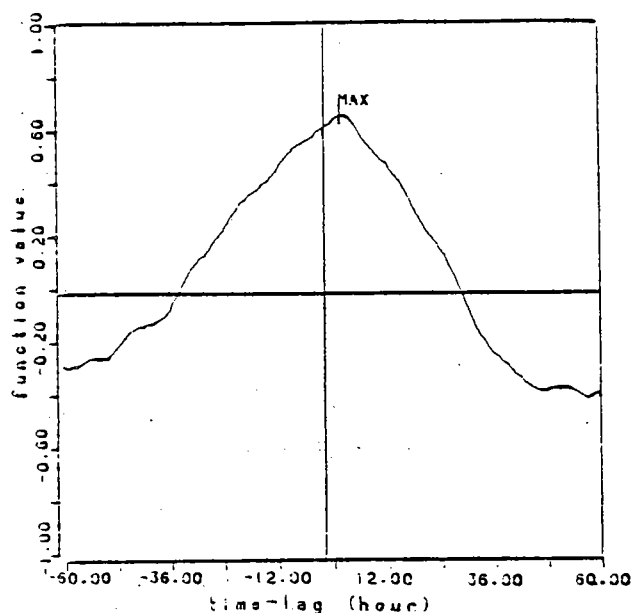


圖 IV-7



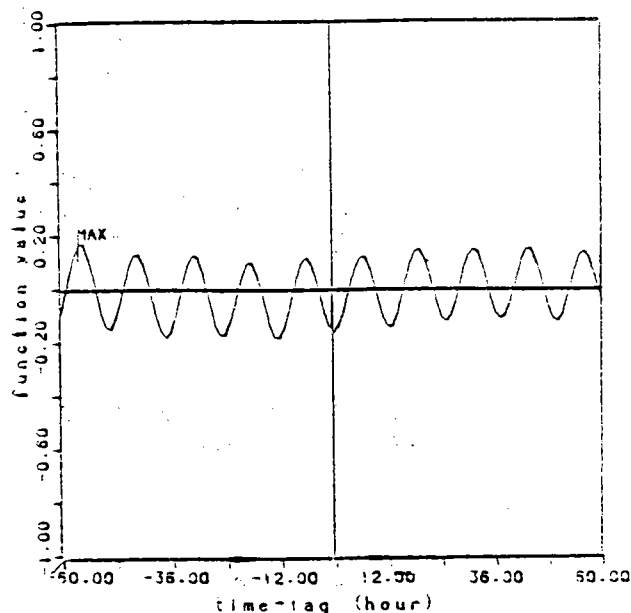
CROSS-CORRELATION FUNCTION

• DATE : 85/12/27/13: 0-86/01/18/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : E-01
 • X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.68 TIME LAG (HR) : 03.



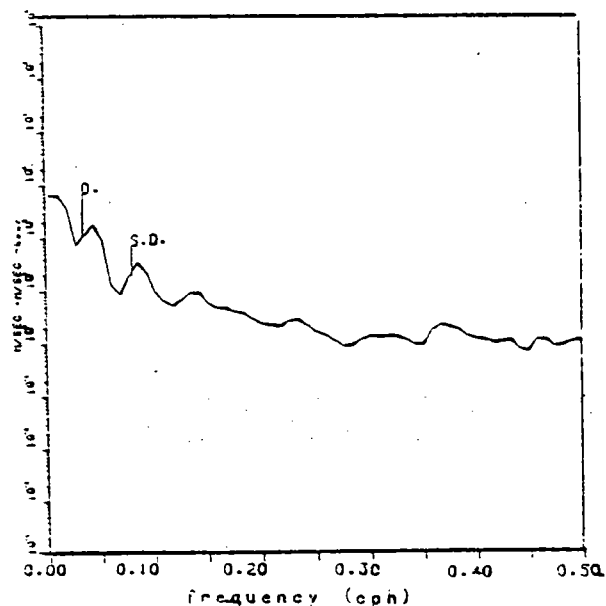
CROSS-CORRELATION FUNCTION

• DATE : 85/12/27/13: 0-86/01/18/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : E-01
 • X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.18 TIME LAG (HR) : **.



SPTAL DENSITY FUNCTION

• DATE : 85/12/27/13: 0-86/01/18/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) : AMPL = 1.02 (M/SEC)
 D. (T = 24.00 HR) : AMPL = 2.40 (M/SEC)



SPTAL DENSITY FUNCTION

• DATE : 85/12/27/13: 0-86/01/18/11:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : E-01
 • DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) : AMPL = 8.67 (CM/SEC)
 D. (T = 24.00 HR) : AMPL = 4.48 (CM/SEC)

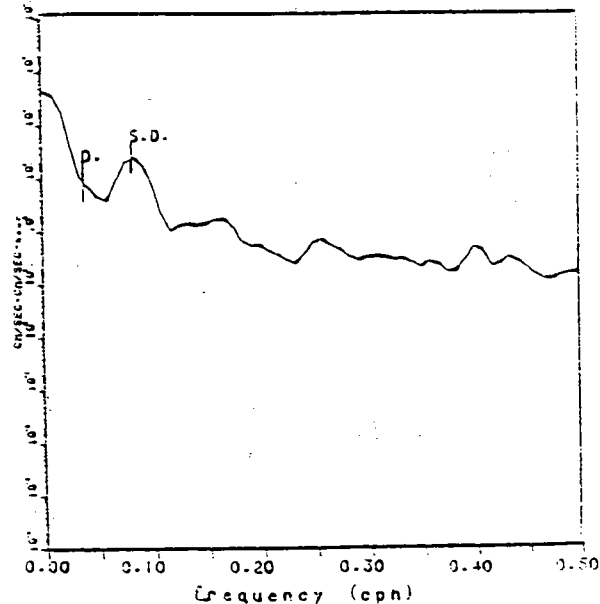
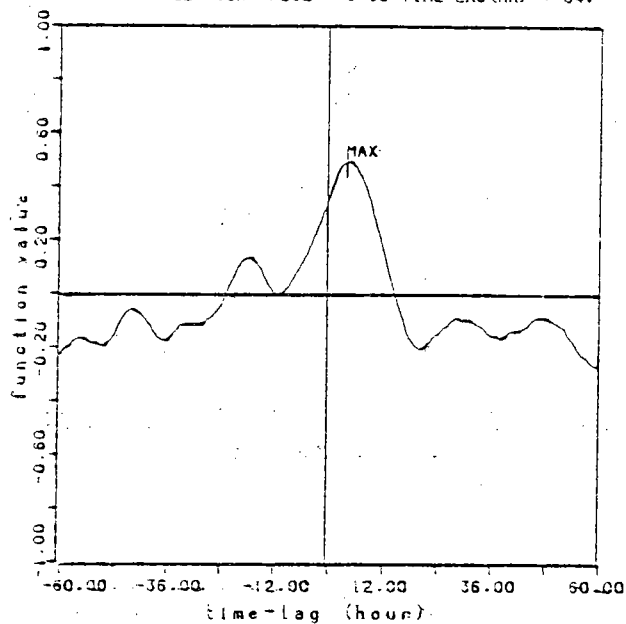


圖 VIII - 8

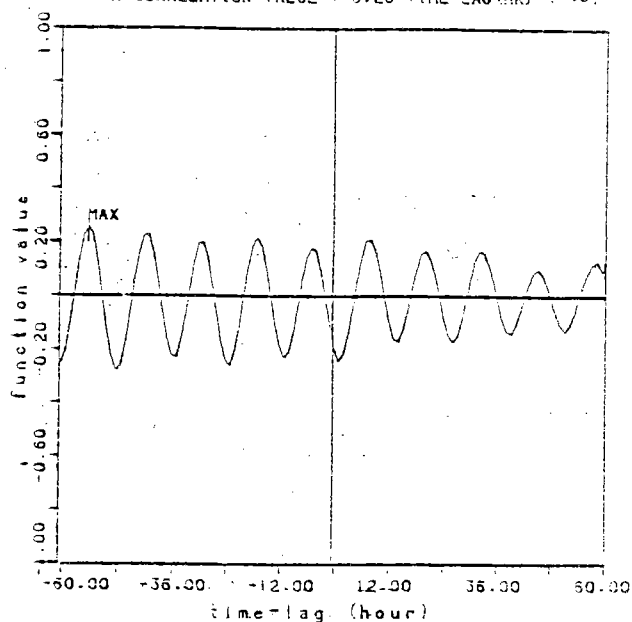
CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : S-01
 • X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.50 TIME LAG (HR) : 04.



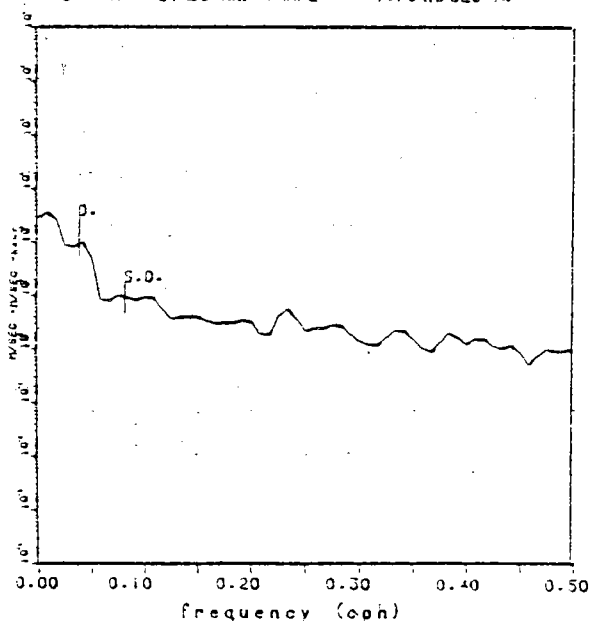
CROSS-CORRELATION FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION X : XX Y : S-01
 • X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.26 TIME LAG (HR) : --.



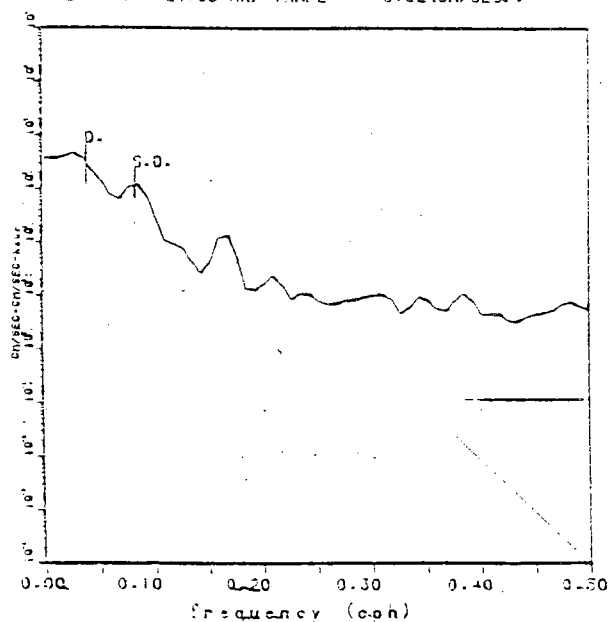
SPECTRAL DENSITY FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : XX
 • DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) ,AMPL = 0.53 (M/SEC)
 D. (T = 24.00 HR) ,AMPL = 1.79 (M/SEC)



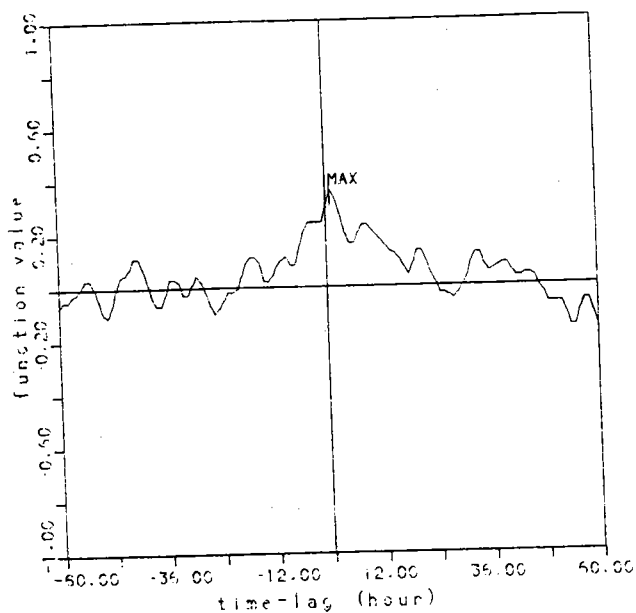
SPECTRAL DENSITY FUNCTION

• DATE : 86/04/08/13: 0-86/04/23/12:0
 • AREA TYPE : TAI-CHUNG HAROUR
 • STATION : S-01
 • DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) ,AMPL = 6.34 (CM/SEC)
 D. (T = 24.00 HR) ,AMPL = 8.52 (CM/SEC)



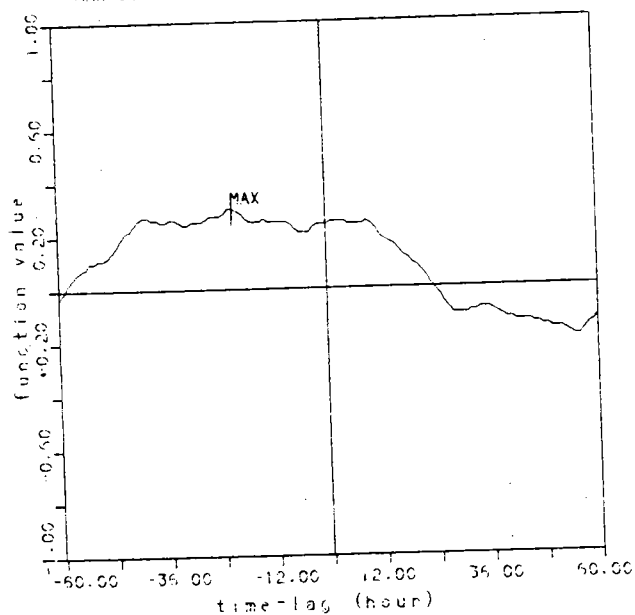
CROSS-CORRELATION FUNCTION

DATE : 67/03/06/12 0-67/03/24/11:0
 AREA TYPE : TAI-CHUNG HARBOUR
 STATION X : XX Y : C-
 X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.35 TIME LAG (HR) : 01.



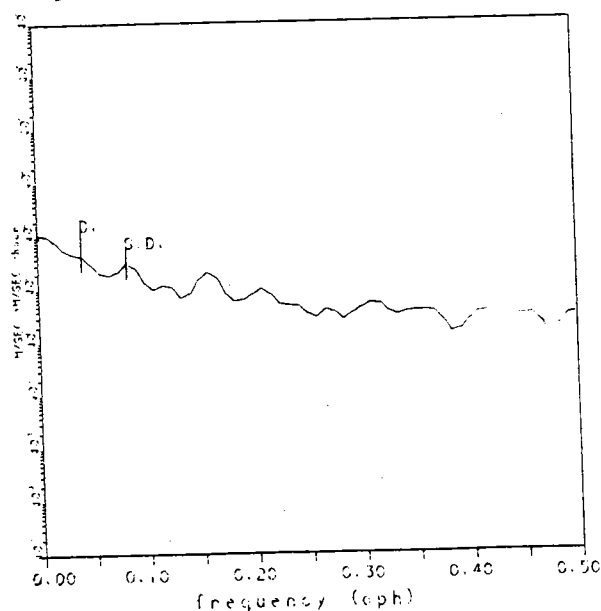
CROSS-CORRELATION FUNCTION

DATE : 67/03/06/12 0-67/03/24/11:0
 AREA TYPE : TAI-CHUNG HARBOUR
 STATION X : XX Y : C-
 X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.30 TIME LAG (HR) : 01.



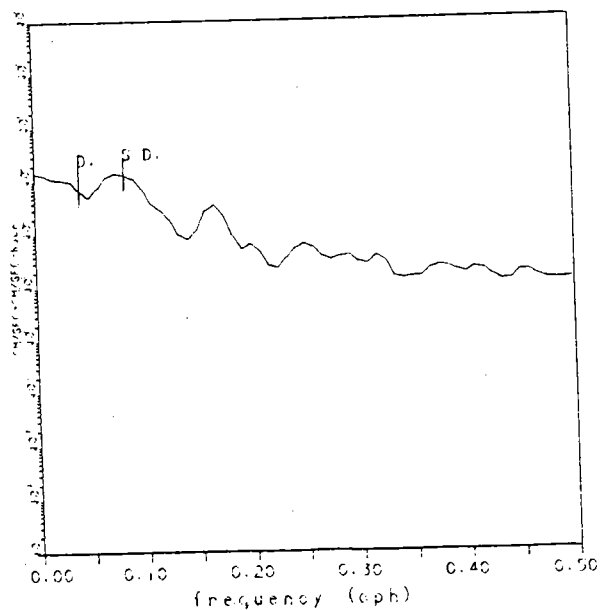
SPECTRAL DENSITY FUNCTION

DATE : 67/03/06/12 0-67/03/24/11:0
 AREA TYPE : TAI-CHUNG HARBOUR
 STATION : XX
 DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) , AMPL = 0.50 (M/SEC)
 D. (T = 24.00 HR) , AMPL = 0.59 (M/SEC).



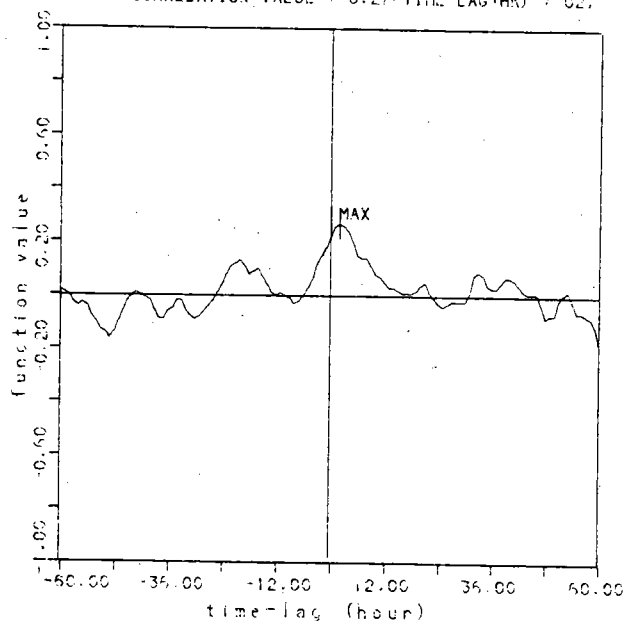
SPECTRAL DENSITY FUNCTION

DATE : 67/03/06/12 0-67/03/24/11:0
 AREA TYPE : TAI-CHUNG HARBOUR
 STATION : C-
 DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) , AMPL = 3.26 (CM/SEC)
 D. (T = 24.00 HR) , AMPL = 2.33 (CM/SEC).



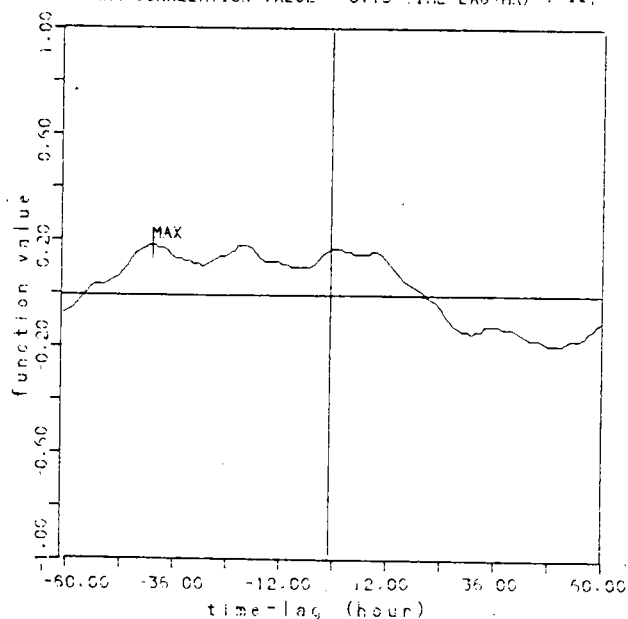
CROSS-CORRELATION FUNCTION

* DATE : 67/03/05/12: 0-67/03/24/09:0
 * AREA TYPE : TAI-CHUNG HARBOUR
 * STATION X : XX Y : H-
 * X : WIND SPEED with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.27 TIME LAG (HR) : 02.



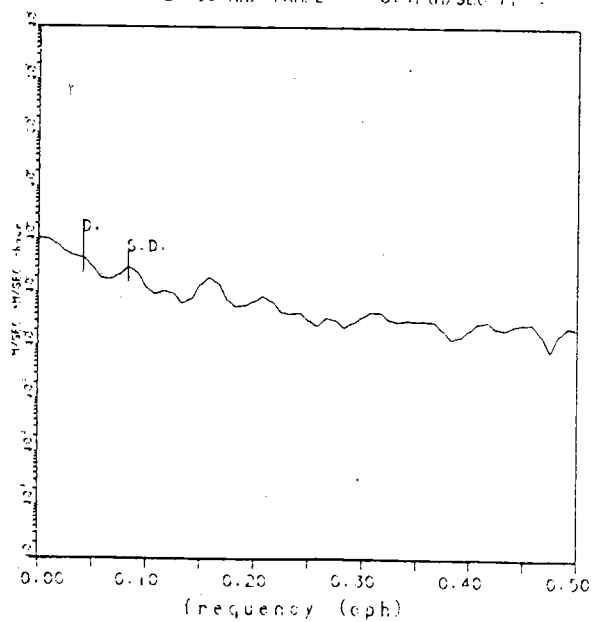
CROSS-CORRELATION FUNCTION

* DATE : 67/03/05/12: 0-67/03/24/09:0
 * AREA TYPE : TAI-CHUNG HARBOUR
 * STATION X : XX Y : H-
 * X : TIDAL LEVEL with Y : CURRENT SPEED
 MAX CORRELATION VALUE : 0.10 TIME LAG (HR) : **



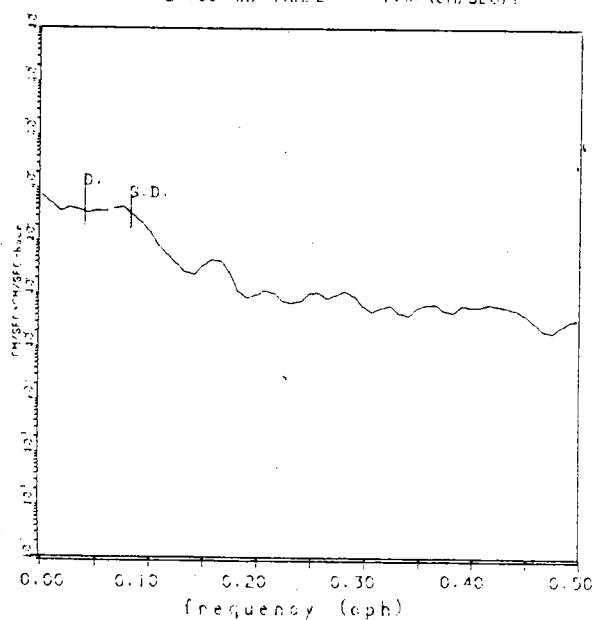
SPECTRAL DENSITY FUNCTION

* DATE : 67/03/05/12: 0-67/03/24/09:0
 * AREA TYPE : TAI-CHUNG HARBOUR
 * STATION : XX
 * DATA NAME : WIND SPEED
 S.D. (T = 12.00 HR) , AMPL = 0.50 (M/SEC)
 D. (T = 24.00 HR) , AMPL = 0.61 (M/SEC)



SPECTRAL DENSITY FUNCTION

* DATE : 67/03/05/12: 0-67/03/24/09:0
 * AREA TYPE : TAI-CHUNG HARBOUR
 * STATION : H-
 * DATA NAME : CURRENT SPEED
 S.D. (T = 12.00 HR) , AMPL = 1.52 (CM/SEC)
 D. (T = 24.00 HR) , AMPL = 1.57 (CM/SEC)



附 圖 IX

流速與風速關係圖

圖 號	時 間	測 站	備 註
IX - 1	86/01/16-86/01/29	BU & BD	
IX - 2	86/02/03-86/02/25	BU & BD	
IX - 3	85/12/27-86/01/18	E	

* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/01/16/15: 0-86/01/29/19:0
 * TOTAL NO. : 317

$$Y(t) = 23.238 + -1.143 X(t-2) + 0.252 X(t-2)**2$$

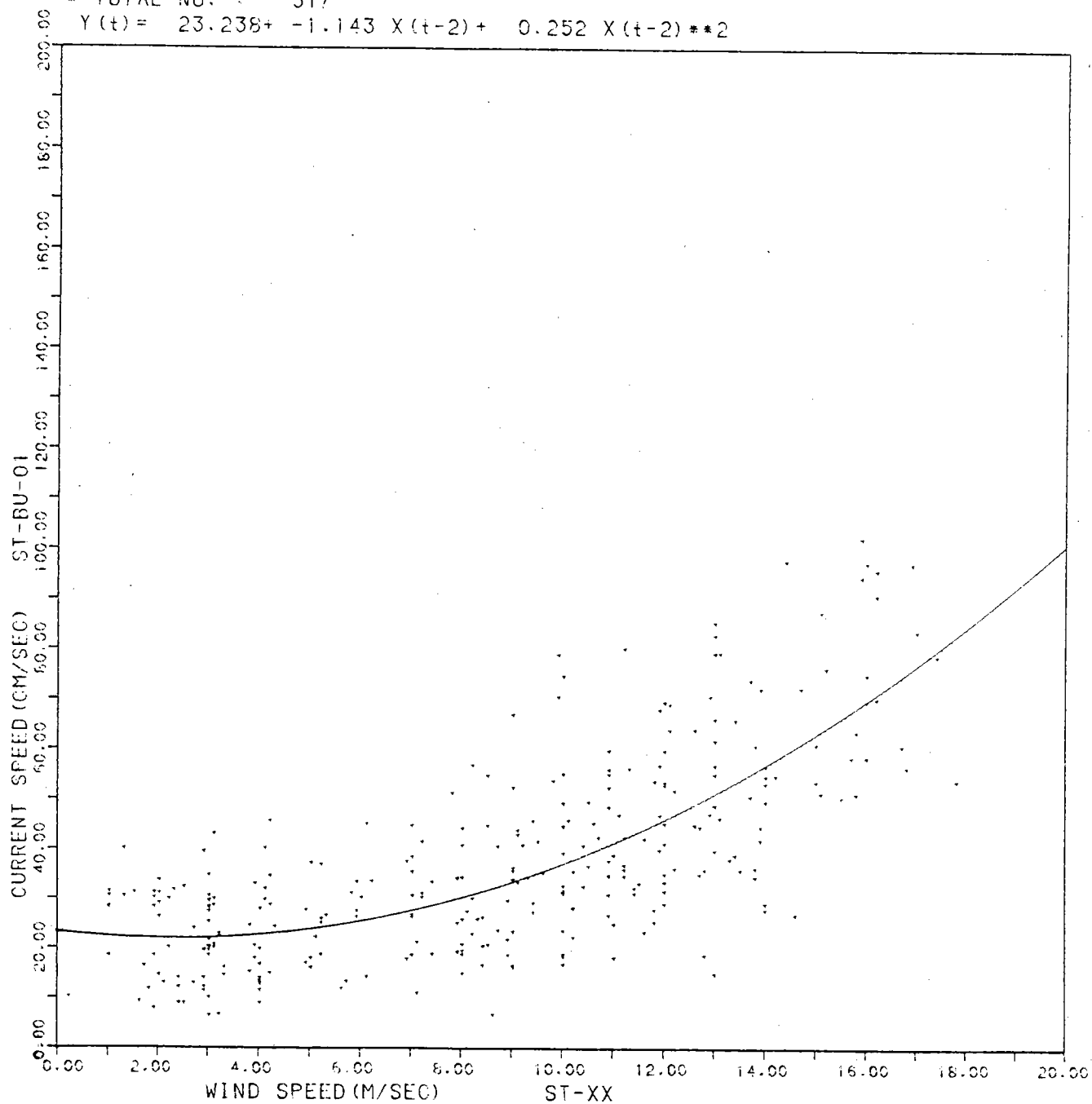


圖 IX - 1 (a)

* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/01/16/15:0-86/01/29/19:0
 * TOTAL NO. : 317
 $Y(t) = 24.949 + -2.245 X(t-1) + 0.279 X(t-1)**2$

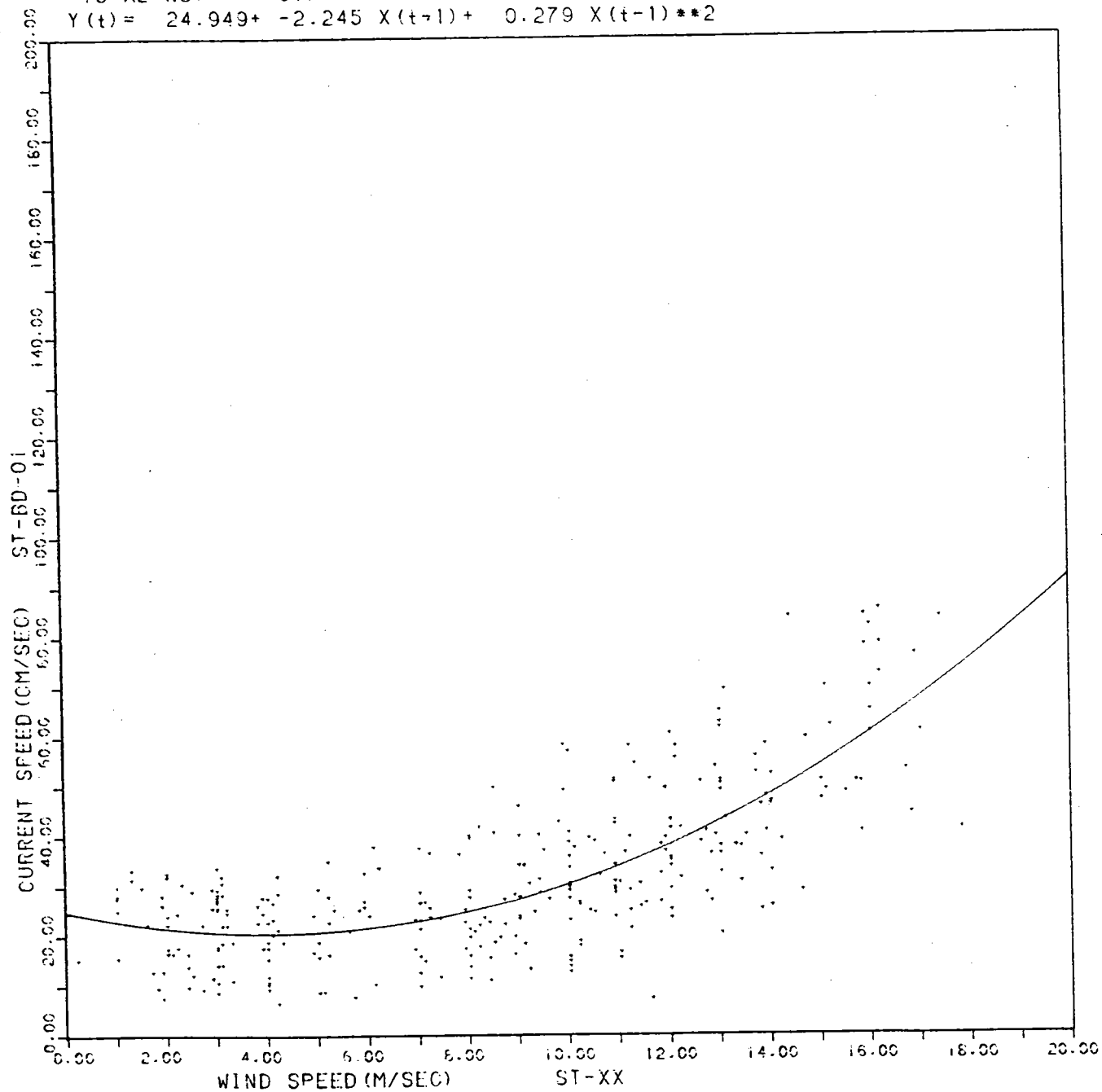


圖 IX - 1 (b)

* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/02/03/09: 0-86/02/25/14:0
 * TOTAL NO. : 534

$$Y(t) = 33.310 + -3.294 X(t-3) + 0.337 X(t-3)**2$$

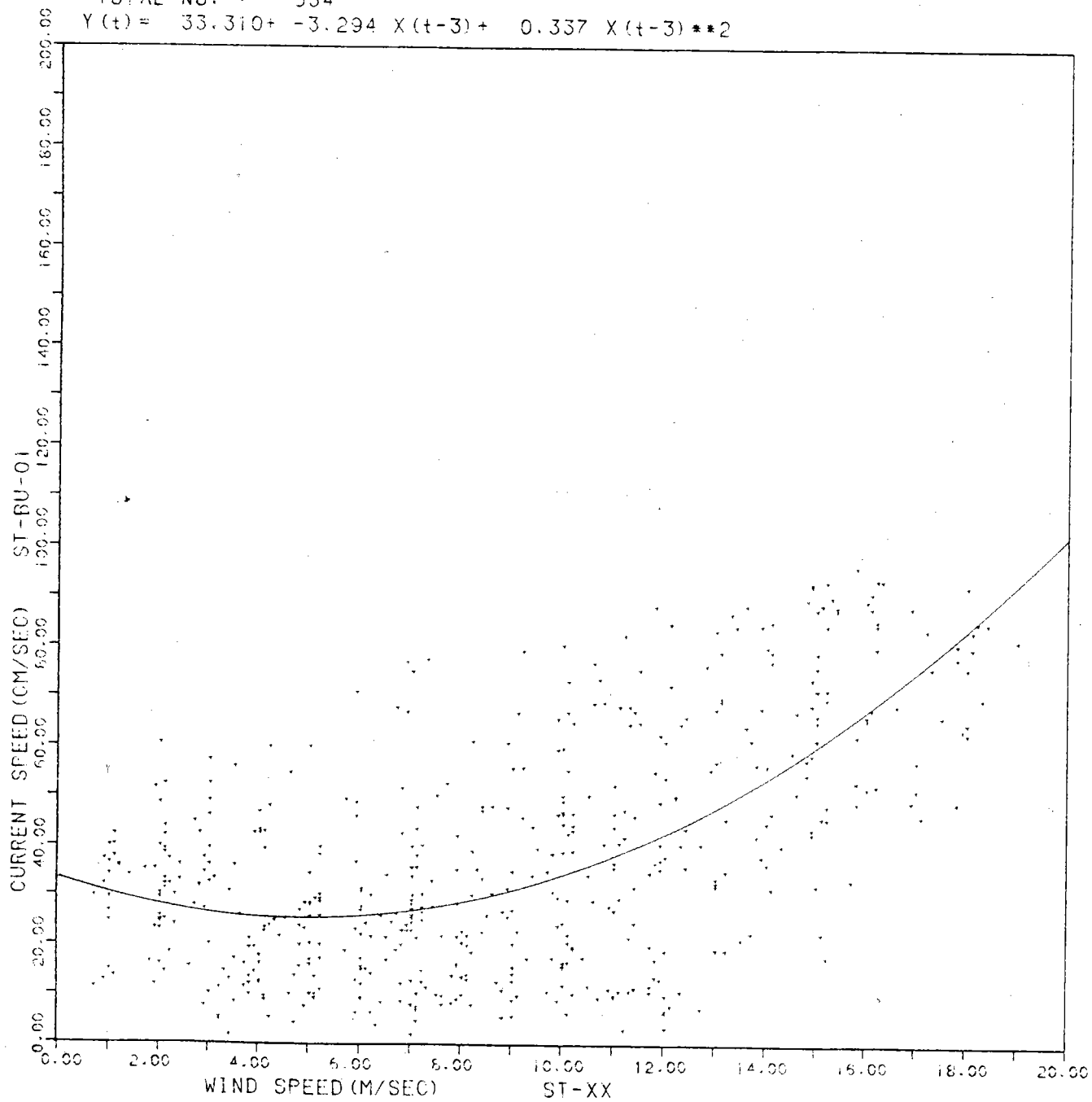


圖 IX - 2 (a)

* AREA : TAI-CHUNG HAROUR
 * DURATION : 86/02/03/09: 0-86/02/25/14:0
 * TOTAL NO. : 534

$$Y(t) = 29.815 + -2.017 X(t-2) + 0.267 X(t-2)**2$$

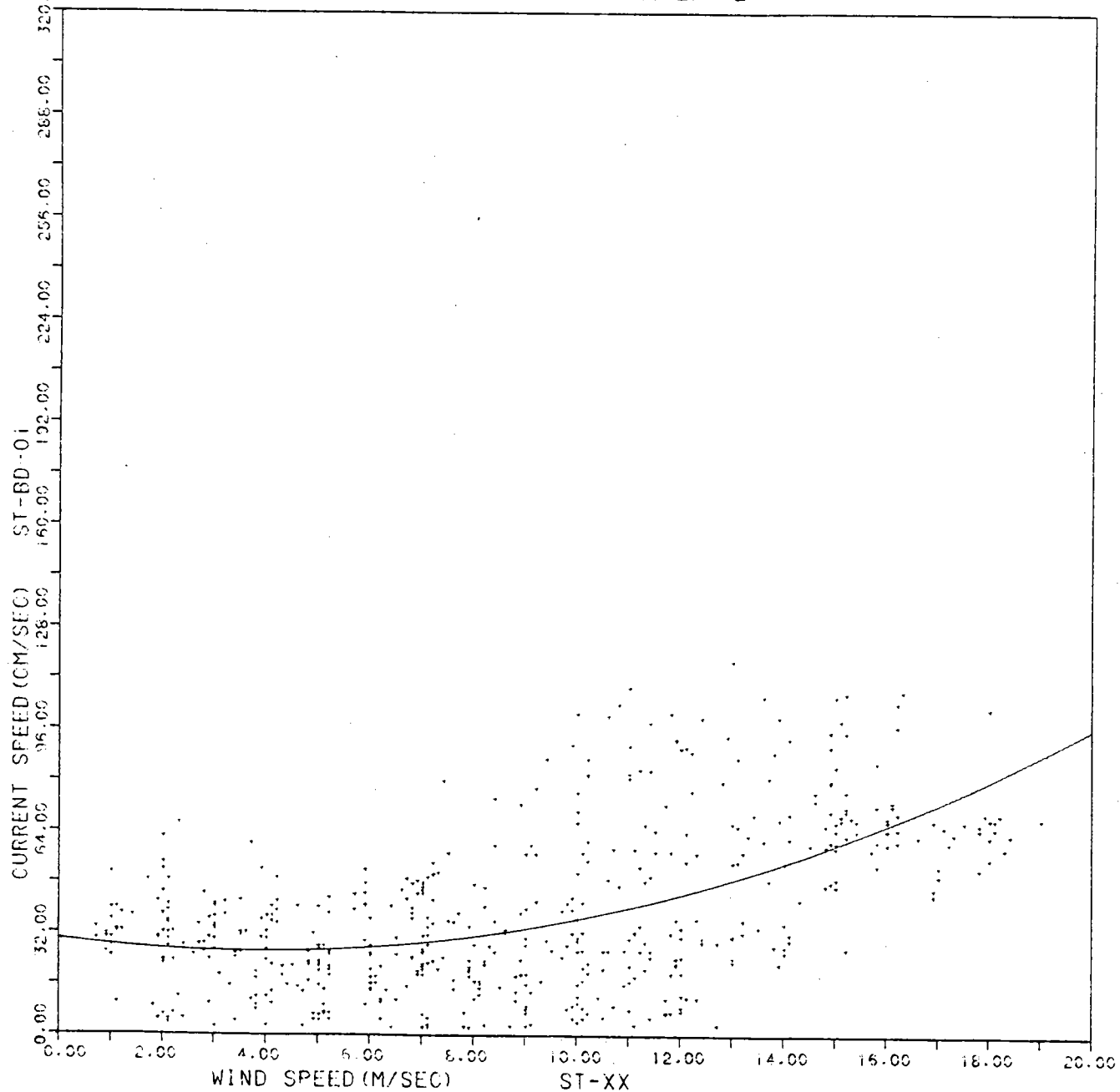


圖 IX - 2 (b)

* AREA : TAI-CHUNG HARBOUR
 * DURATION : 85/12/27/13: 0-86/01/18/11:0
 * TOTAL NO. : 527
 $Y(t) = 8.794 + 4.170 X(t-2)$

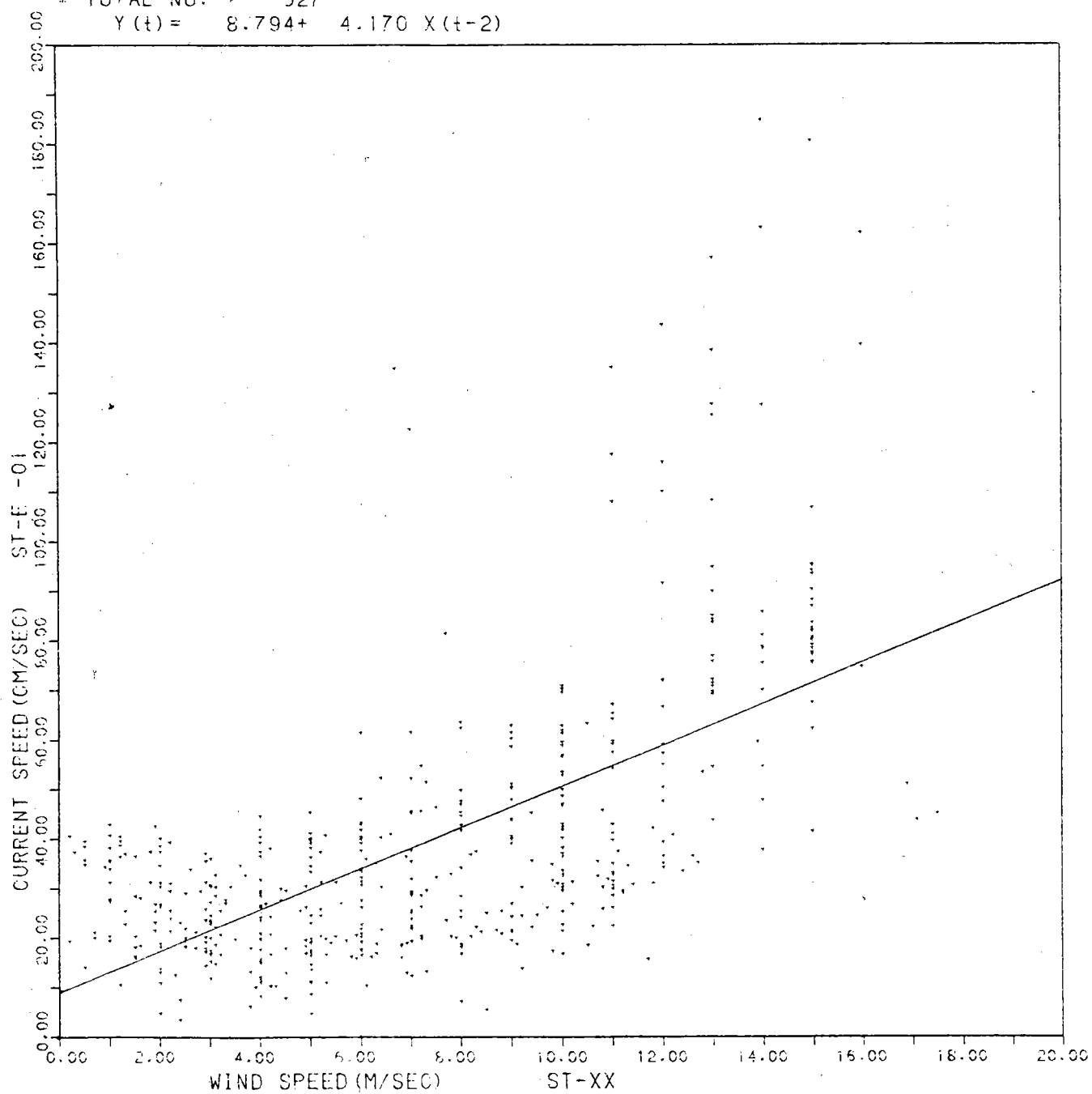


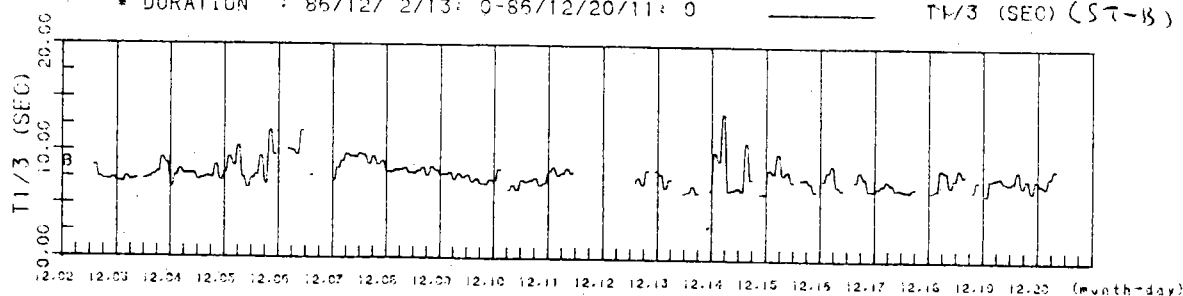
圖 IX - 3

附 圖 X

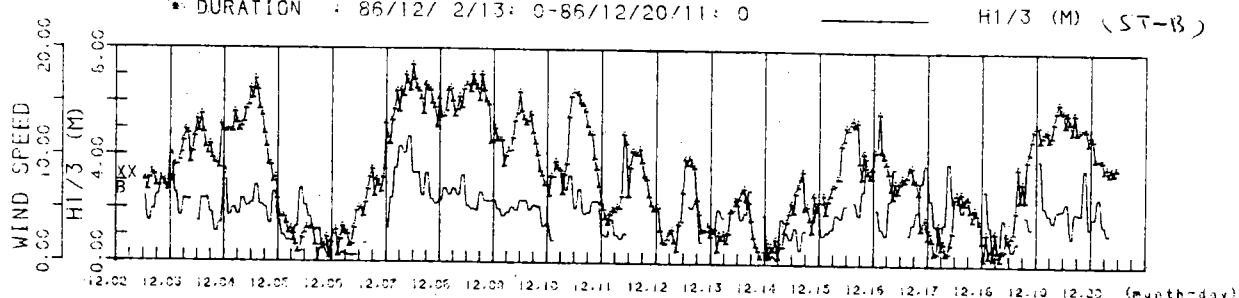
波浪及風速延時圖

圖 號	時 間	測 站	備 註
X - 1	86/12/02-87/01/07	B	
X - 2	86/03/07-03/10	W	
X - 3	86/04/08-04/24	W	
X - 4	87/03/08-03/23	H	

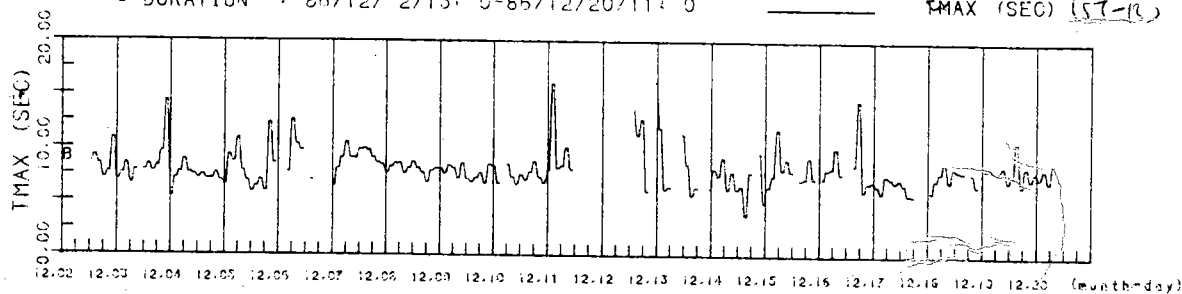
* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/12/ 2/13: 0-86/12/20/11: 0



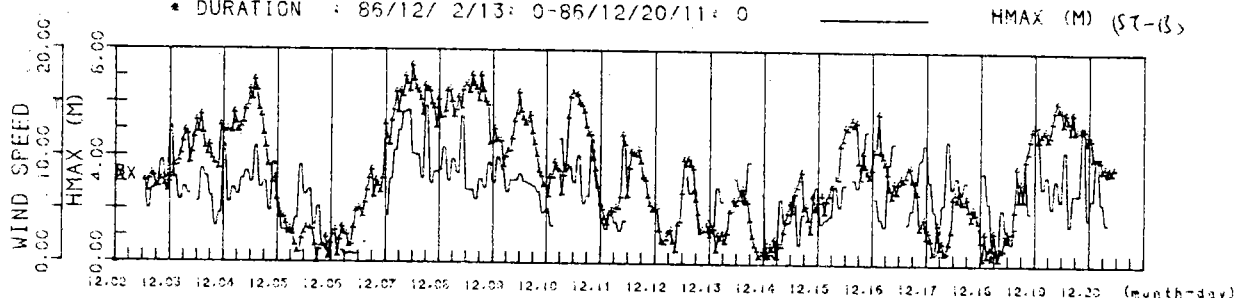
* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/12/ 2/13: 0-86/12/20/11: 0



* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/12/ 2/13: 0-86/12/20/11: 0



* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/12/ 2/13: 0-86/12/20/11: 0



* AREA : TAI-CHUNG HARBOUR
 * DURATION : 86/12/ 2/13: 0-86/12/20/11: 0

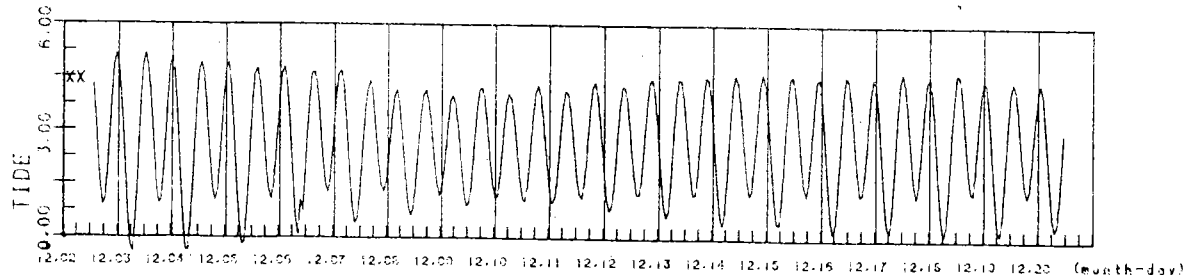
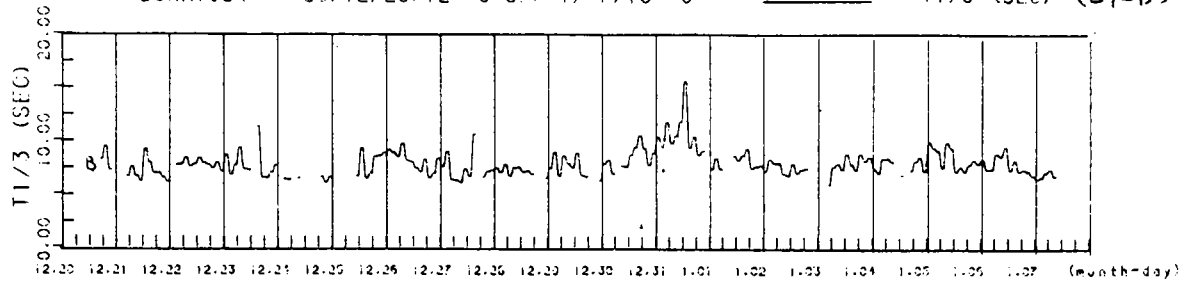
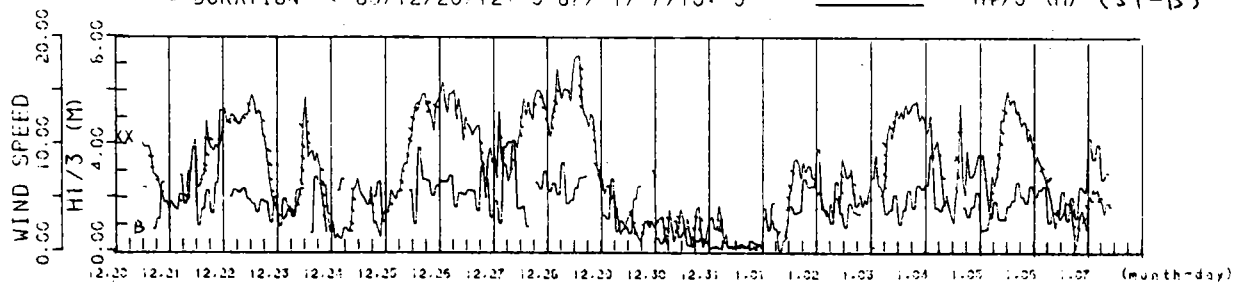


圖 X - 1 (a)

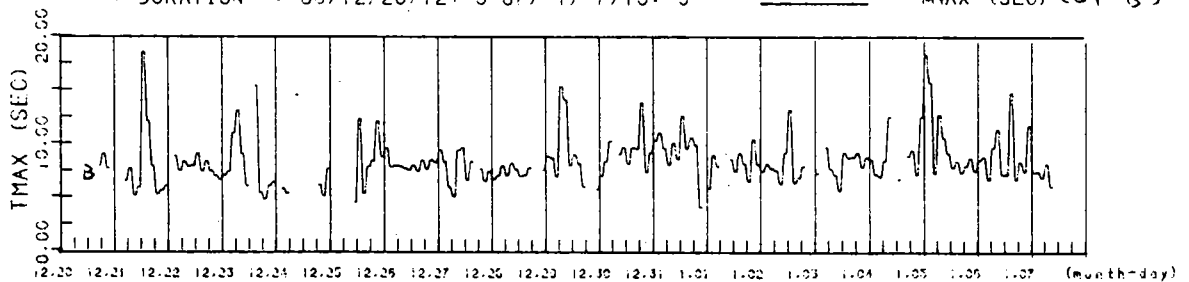
• AREA : TAI-CHUNG HARBOUR
 • DURATION : 86/12/20/12: 0-87/ 1/ 7/10: 0 T1/3 (SEC) (ST-B)



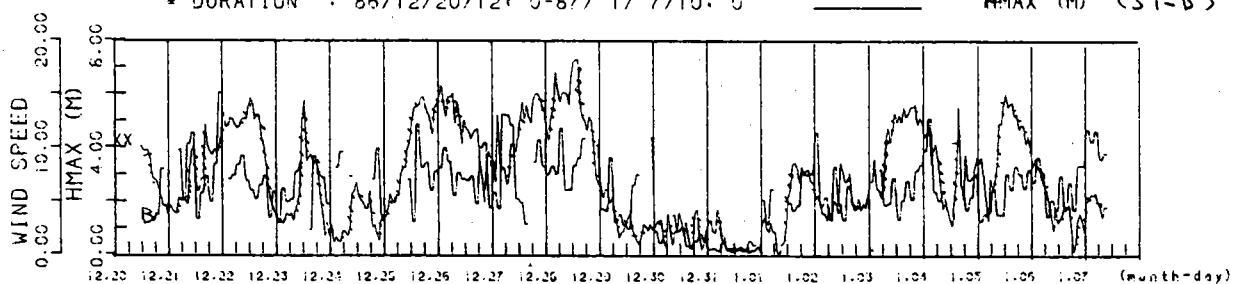
• AREA : TAI-CHUNG HARBOUR
 • DURATION : 86/12/20/12: 0-87/ 1/ 7/10: 0 (ST-XX) WIND SPEED H1/3 (M) (ST-B)



• AREA : TAI-CHUNG HARBOUR
 • DURATION : 86/12/20/12: 0-87/ 1/ 7/10: 0 TMAX (SEC) (ST-B)



• AREA : TAI-CHUNG HARBOUR
 • DURATION : 86/12/20/12: 0-87/ 1/ 7/10: 0 (ST-XX) WIND SPEED HMAX (M) (ST-B)



• AREA : TAI-CHUNG HARBOUR
 • DURATION : 86/12/20/12: 0-87/ 1/ 7/10: 0 (ST-XX) TIDE

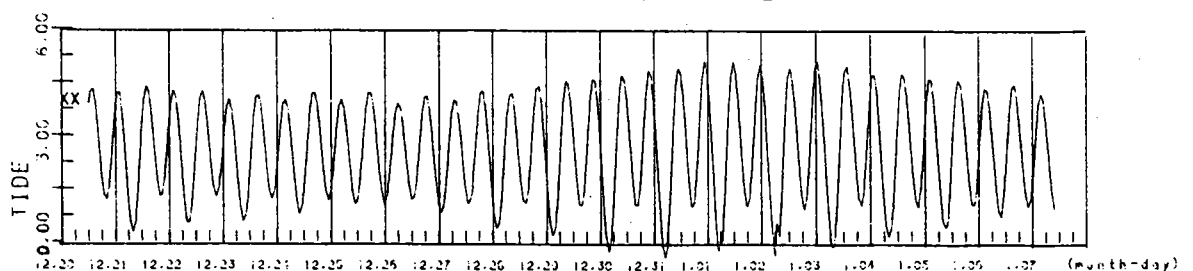
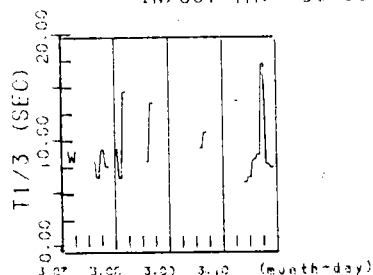


圖 X - 1 (b)

AREA : TAI-CHUNG HARBOUR
IN/OUT TM. : 86.03.07/14:00-86.03.10/23:00

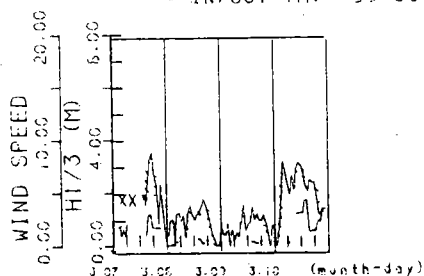
T1/3 (SEC) (ST-W)



AREA : TAI-CHUNG HARBOUR
IN/OUT TM. : 86.03.07/14:00-86.03.10/23:00

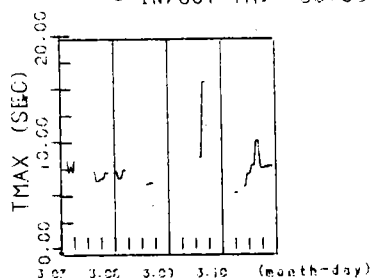
(ST-XX) WIND SPEED

H1/3 (M) (ST-W)



AREA : TAI-CHUNG HARBOUR
IN/OUT TM. : 86.03.07/14:00-86.03.10/23:00

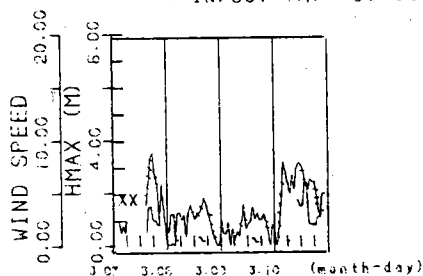
TMAX (SEC) (ST-W)



AREA : TAI-CHUNG HARBOUR
IN/OUT TM. : 86.03.07/14:00-86.03.10/23:00

(ST-XX) WIND SPEED

HMAX (M) (ST-W)



AREA : TAI-CHUNG HARBOUR
DURATION : 86/ 3/ 7/14:00-86/ 3/10/22:00

(ST-XX) TIDE

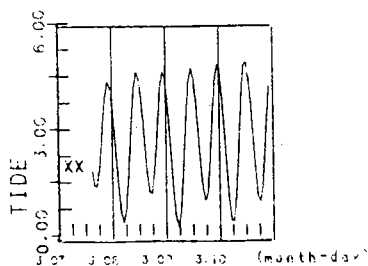
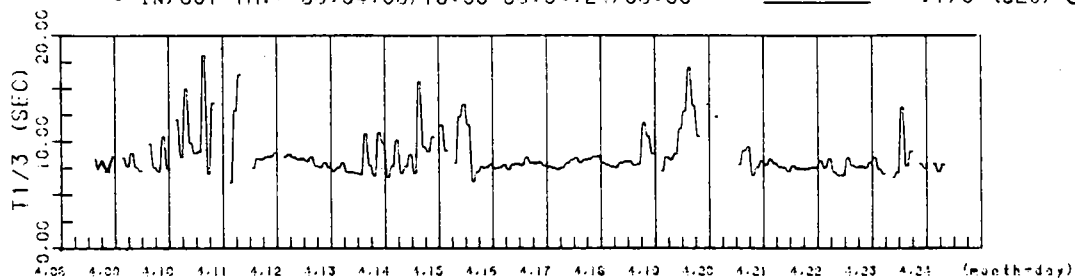


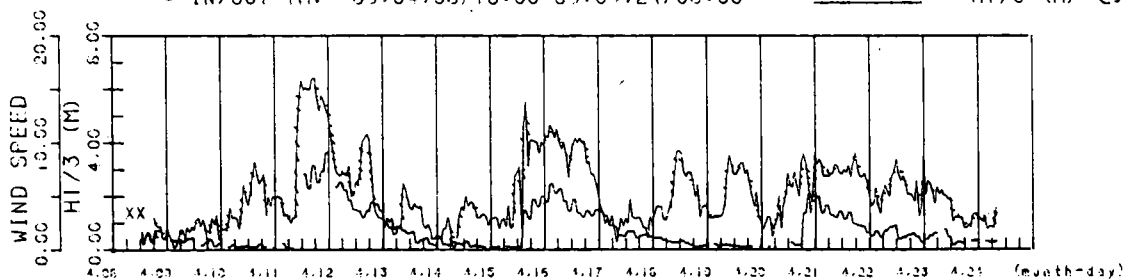
圖 X - 2



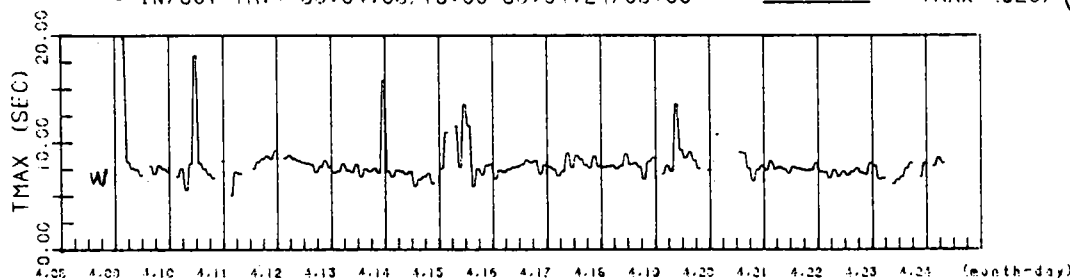
AREA : TAI-CHUNG HARBOUR
IN/OUT TM. : 86.04.08/18:00-86.04.24/08:00



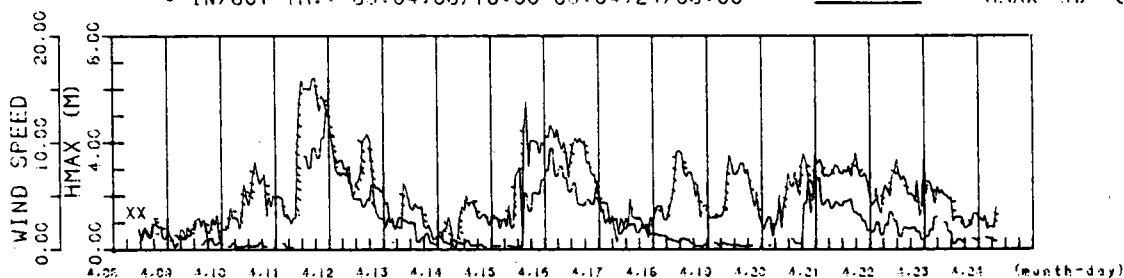
AREA : TAI-CHUNG HARBOUR
IN/OUT TM. : 86.04.08/18:00-86.04.24/08:00



AREA : TAI-CHUNG HARBOUR
IN/OUT TM. : 86.04.08/18:00-86.04.24/08:00



AREA : TAI-CHUNG HARBOUR
IN/OUT TM. : 86.04.08/18:00-86.04.24/08:00



AREA : TAI-CHUNG HARBOUR
DURATION : 86/ 4/ 8/18: 0-86/ 4/24/ 8: 0

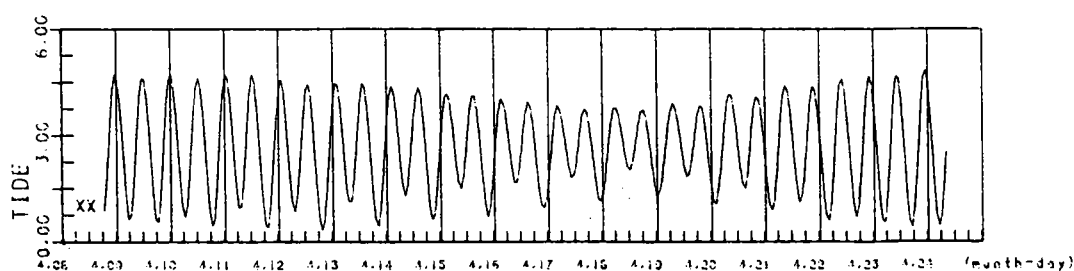


圖 X - 3

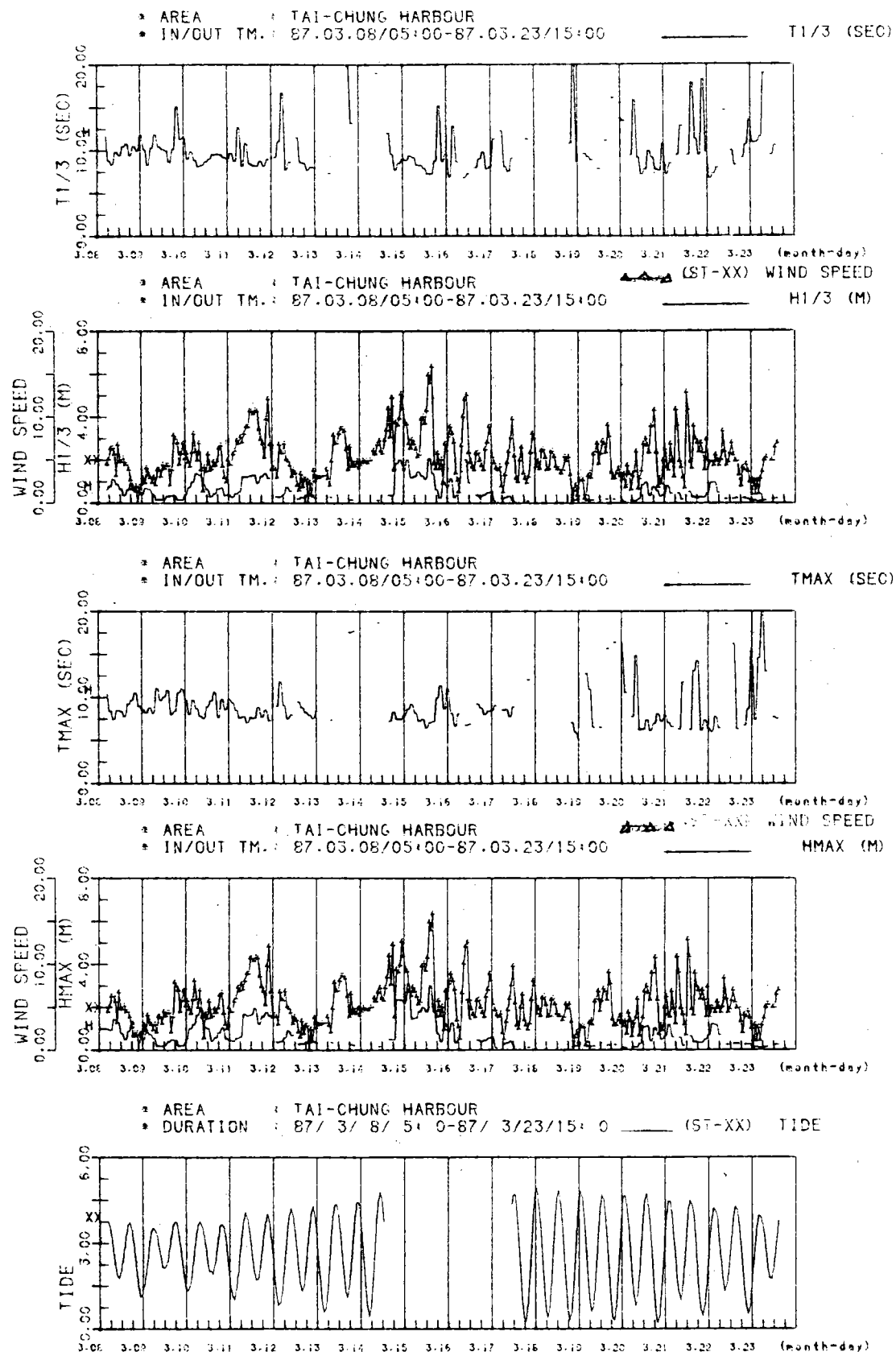


圖 X - 4

附 圖 XI

波高、週期統計方塊圖

圖 號	時 間	測 站	備 註
XI - 1	86/12/02-12/11	B	
XI - 2	86/12/12-87/01/07	B	
XI - 3	86/03/07-03/10	W	
XI - 4	86/04/08-04/24	W	
XI - 5	87/03/06-03/24	H	

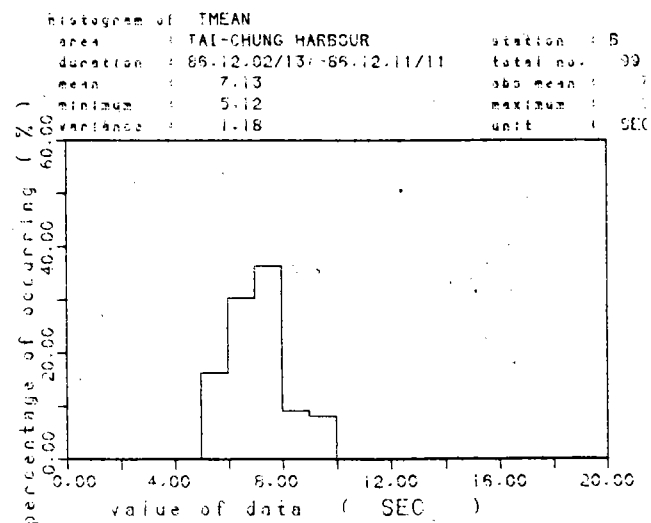
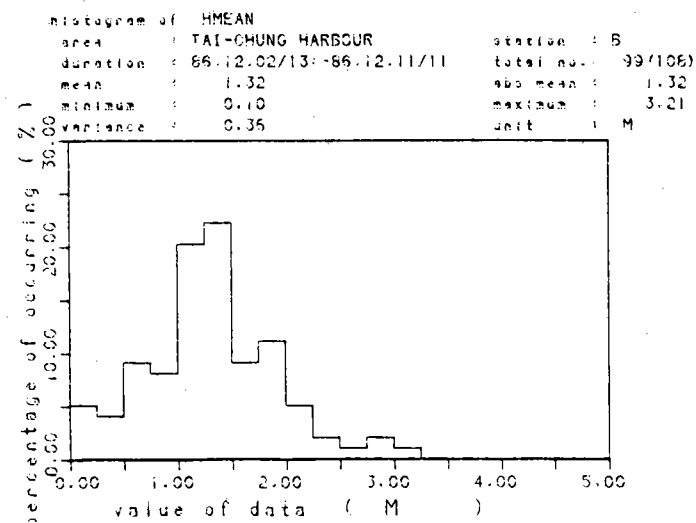
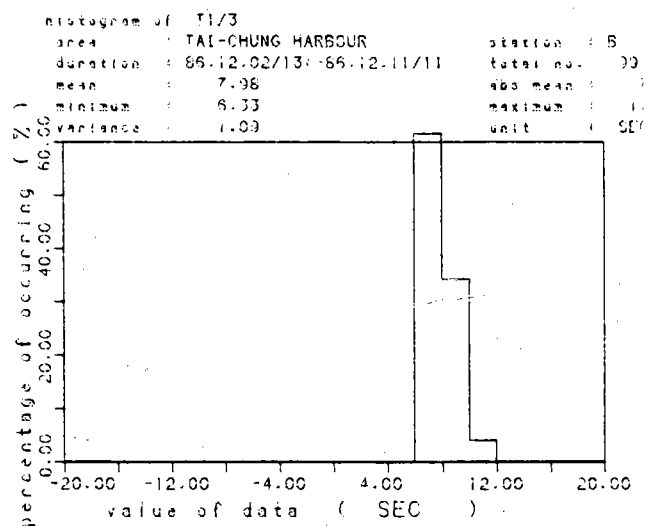
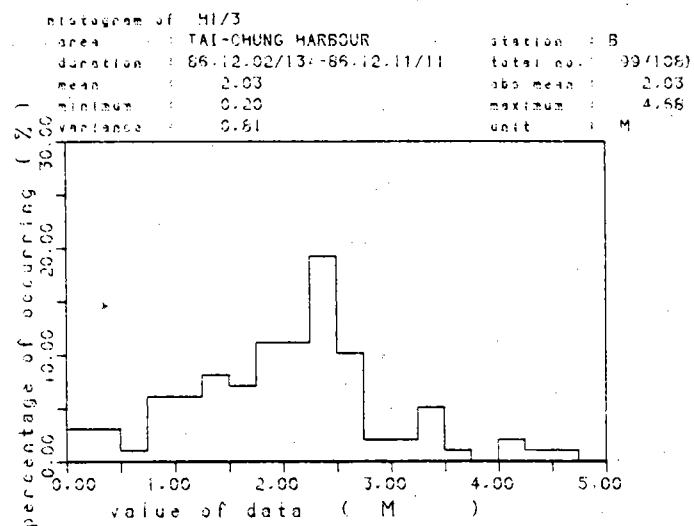
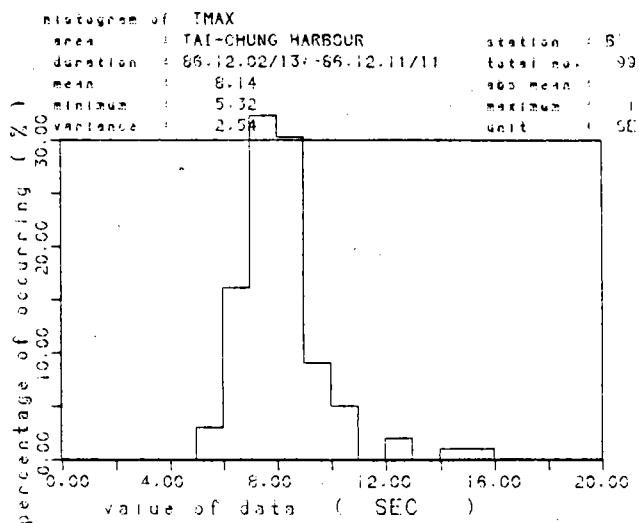
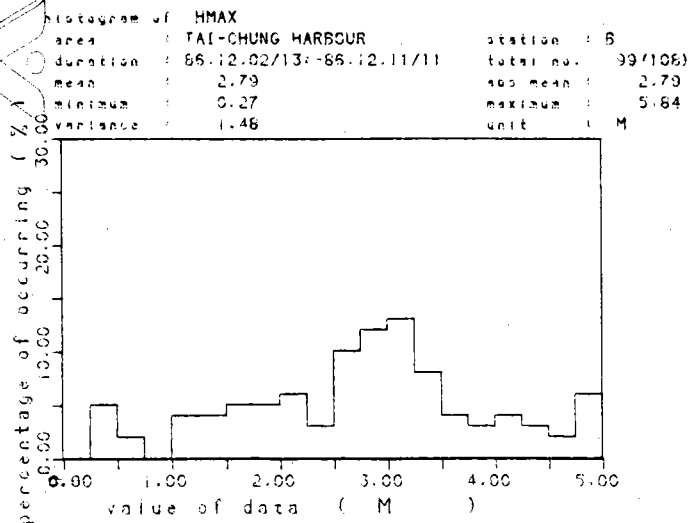
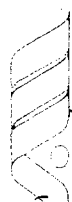


圖 XI-1

0042

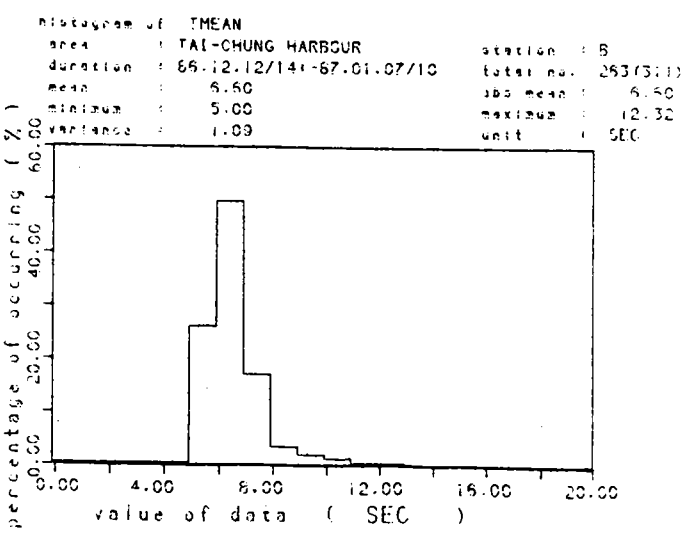
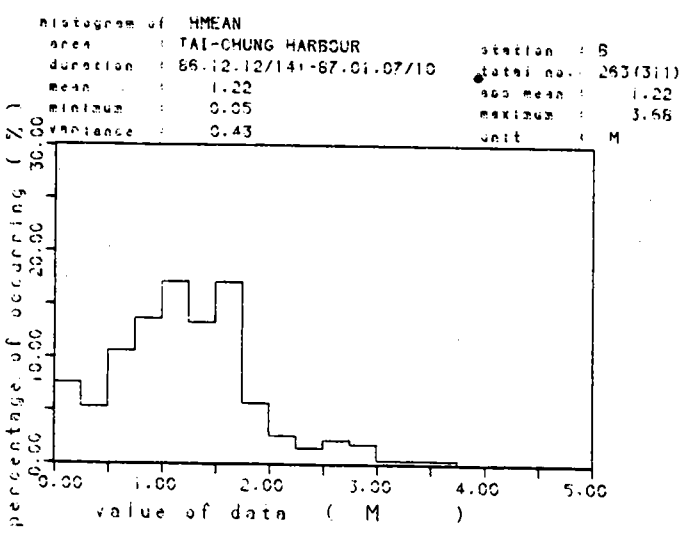
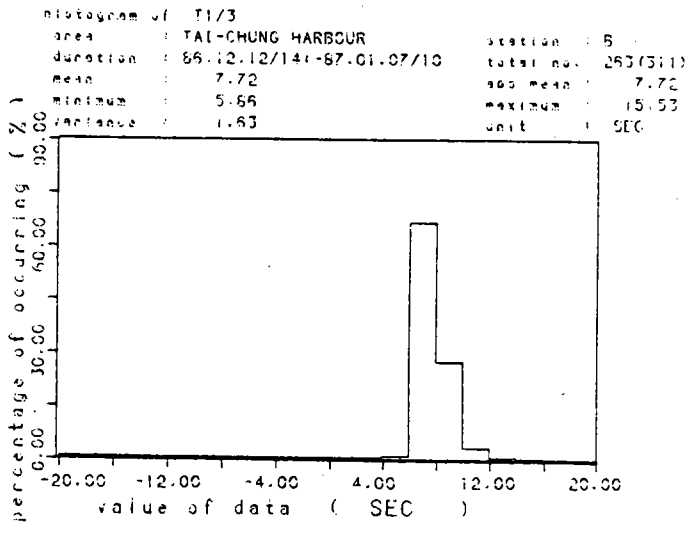
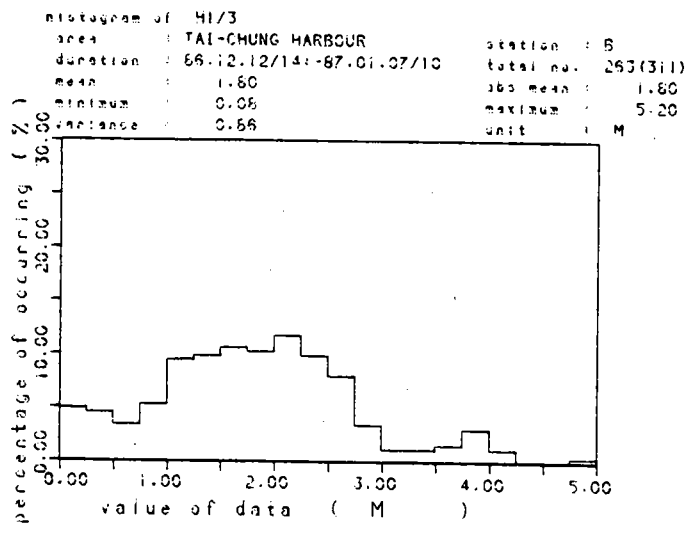
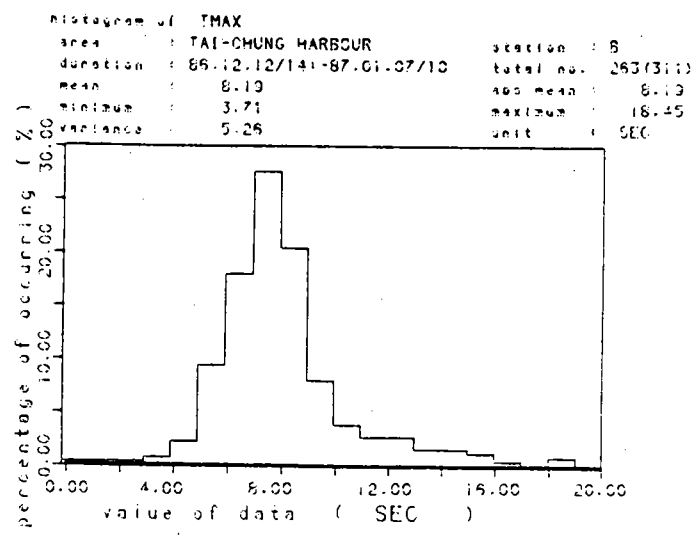
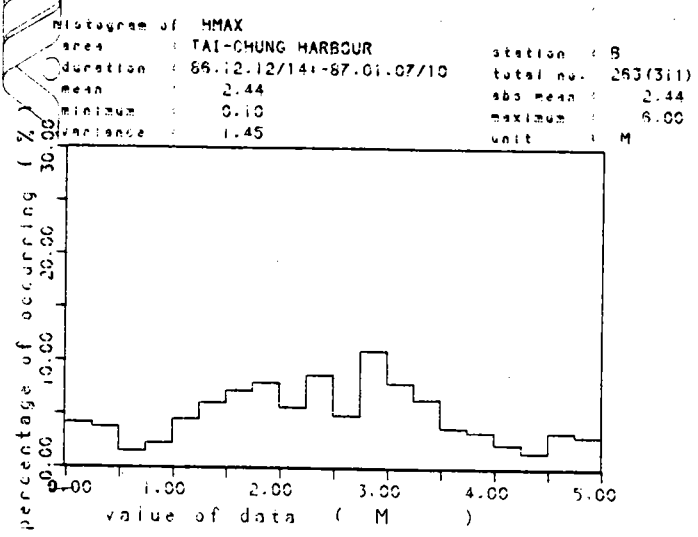


圖 XI - 2
- 223 -

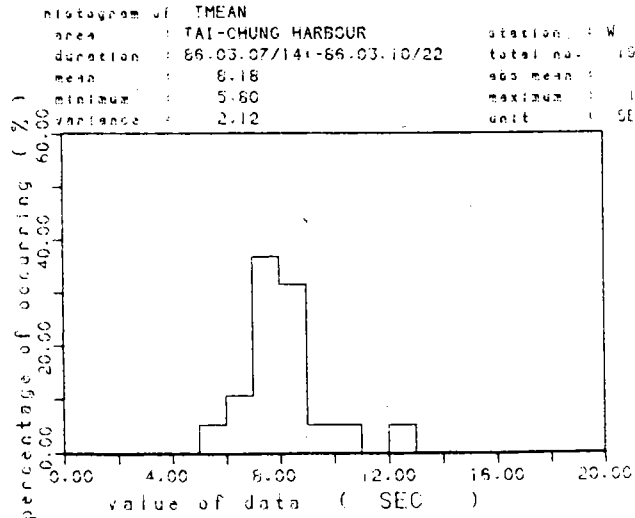
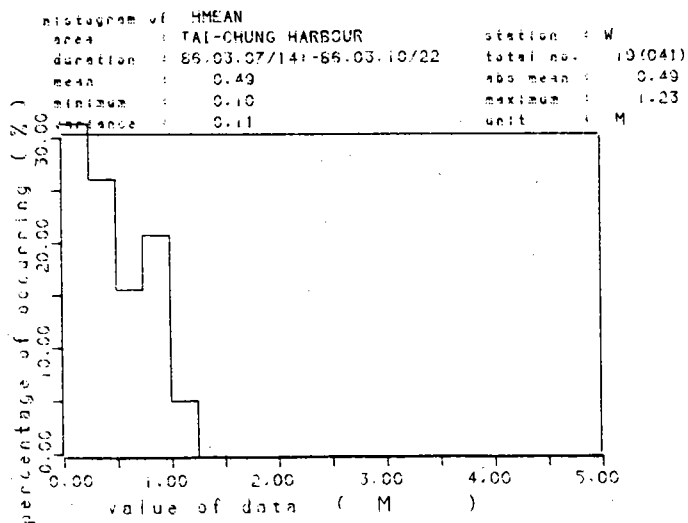
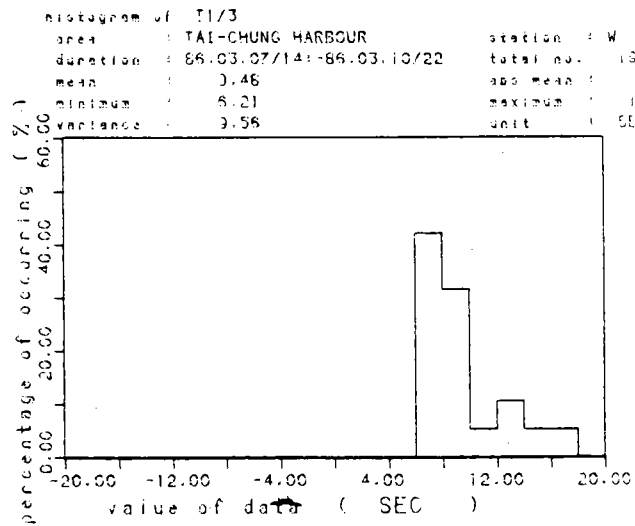
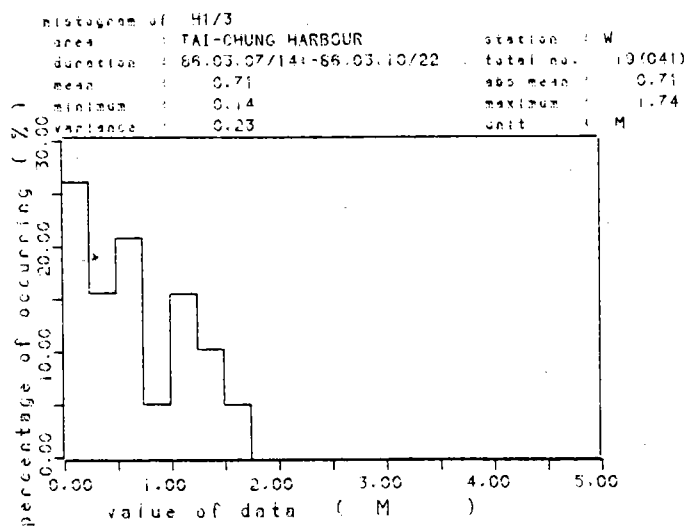
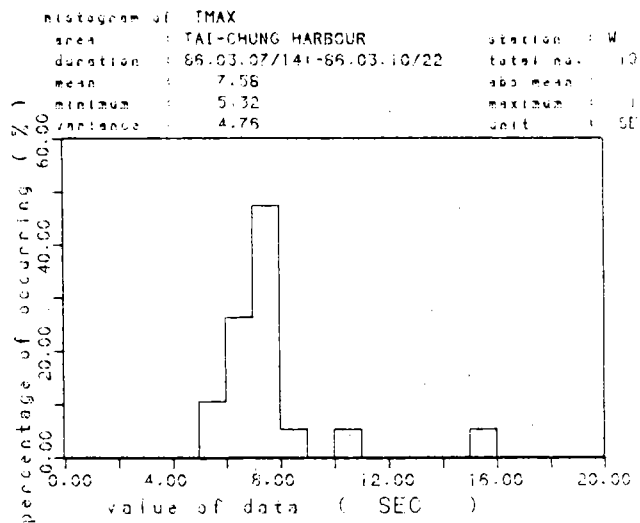
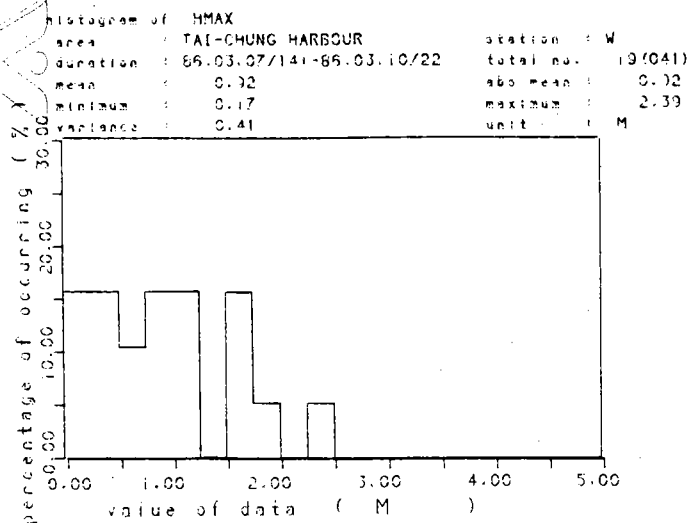


圖 XI - 3

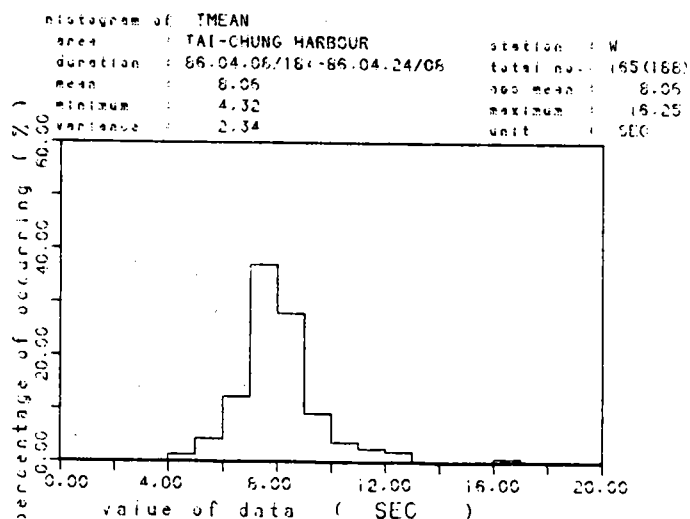
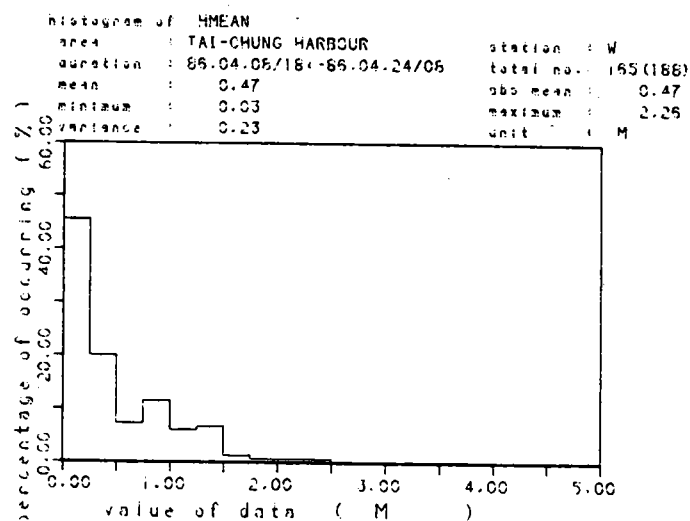
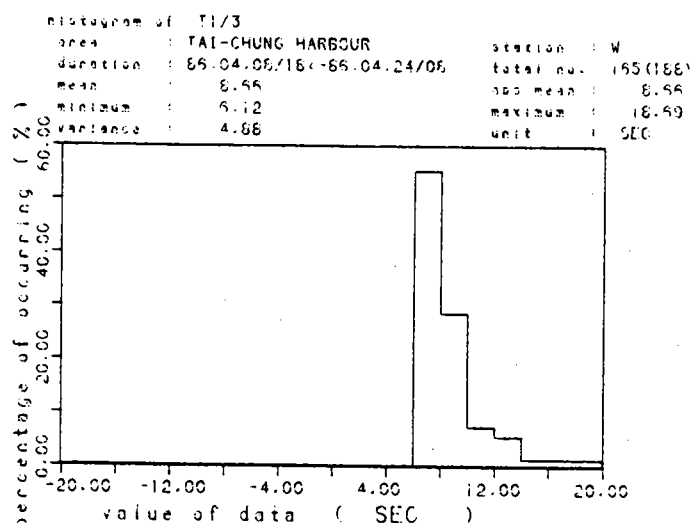
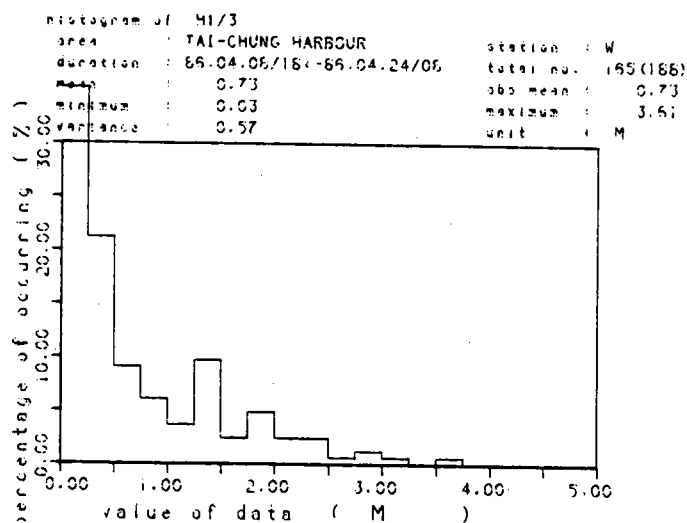
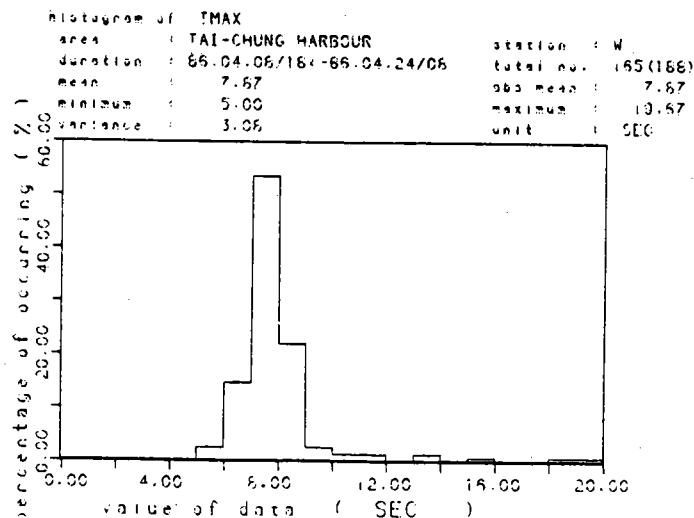
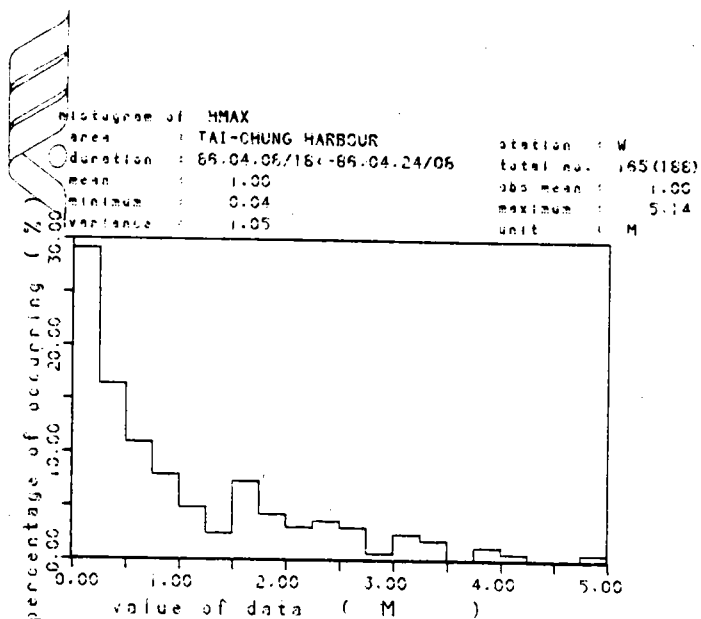
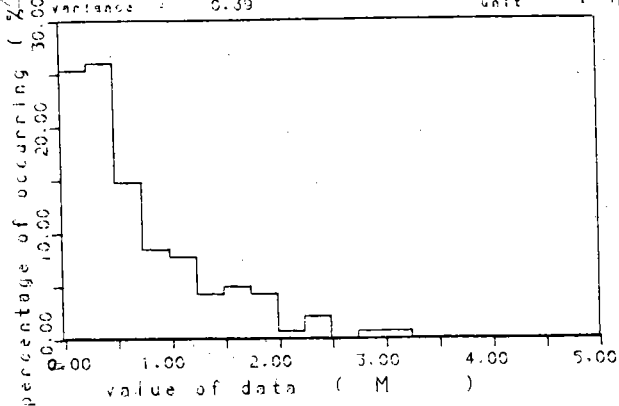
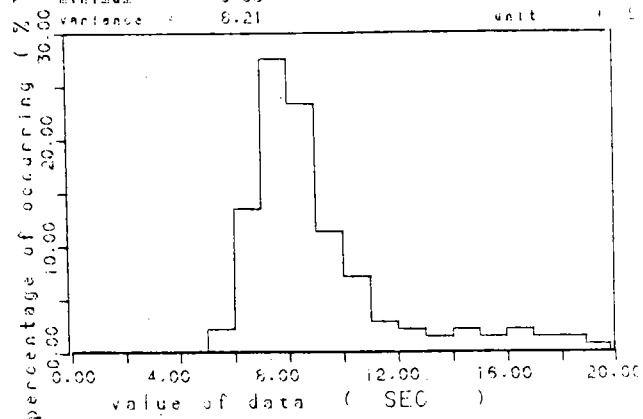


圖 XI - 4

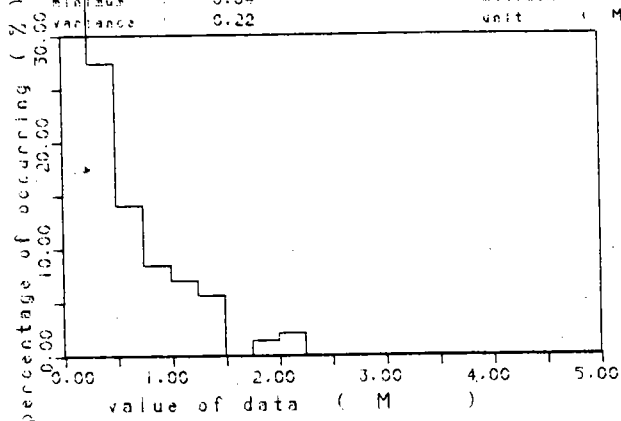
histogram of HMAX
 area : TAI-CHUNG HARBOUR station : H-01
 duration : 87.03.05/15-87.03.24/11 total no. : 142(215)
 mean : 0.71 abs mean : 0.71
 minimum : 0.07 maximum : 3.08
 variance : 0.39 unit : M



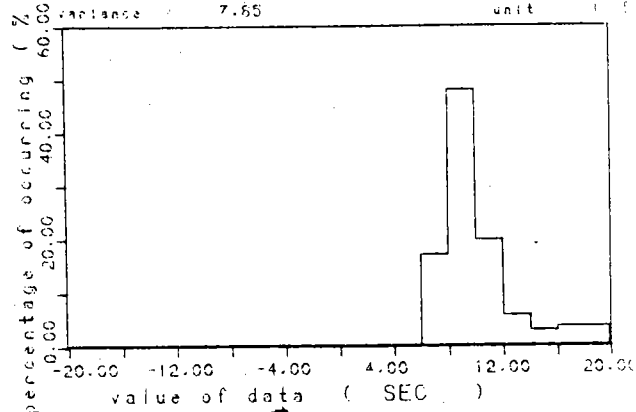
histogram of TMAX
 area : TAI-CHUNG HARBOUR station : H-01
 duration : 87.03.05/15-87.03.24/11 total no. : 142(215)
 mean : 9.12 abs mean : 9.12
 minimum : 5.06 maximum : 20.00
 variance : 8.21 unit : SEC



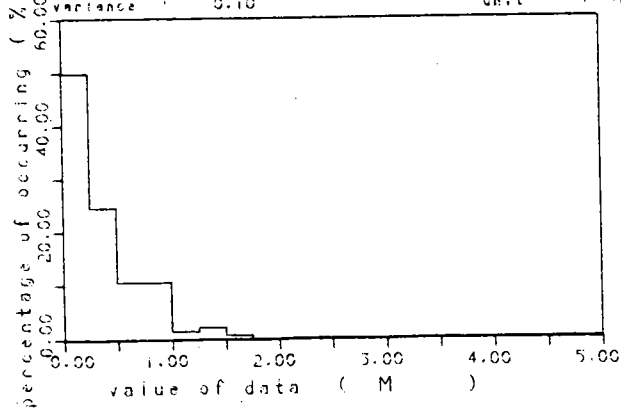
histogram of H1/3
 area : TAI-CHUNG HARBOUR station : H-01
 duration : 87.03.05/15-87.03.24/11 total no. : 142(215)
 mean : 0.54 abs mean : 0.54
 minimum : 0.04 maximum : 2.05
 variance : 0.22 unit : M



histogram of T1/3
 area : TAI-CHUNG HARBOUR station : H-01
 duration : 87.03.05/15-87.03.24/11 total no. : 142(215)
 mean : 10.10 abs mean : 10.10
 minimum : 6.64 maximum : 20.00
 variance : 7.65 unit : SEC



histogram of HMEAN
 area : TAI-CHUNG HARBOUR station : H-01
 duration : 87.03.05/15-87.03.24/11 total no. : 142(215)
 mean : 0.35 abs mean : 0.35
 minimum : 0.02 maximum : 1.52
 variance : 0.10 unit : M



histogram of TMEAN
 area : TAI-CHUNG HARBOUR station : H-01
 duration : 87.03.05/15-87.03.24/11 total no. : 142(215)
 mean : 8.95 abs mean : 8.95
 minimum : 6.39 maximum : 20.00
 variance : 2.76 unit : SEC

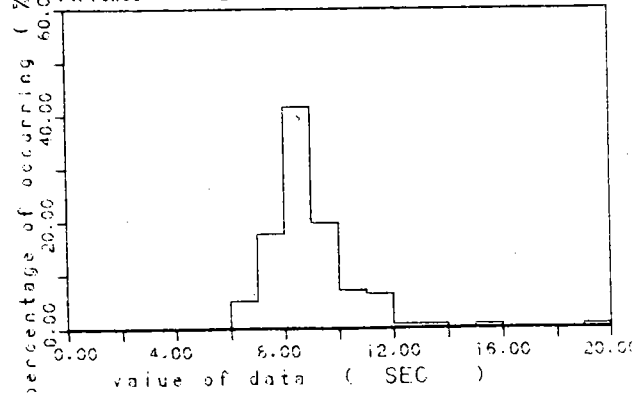


圖 XI - 5

附 圖 XII

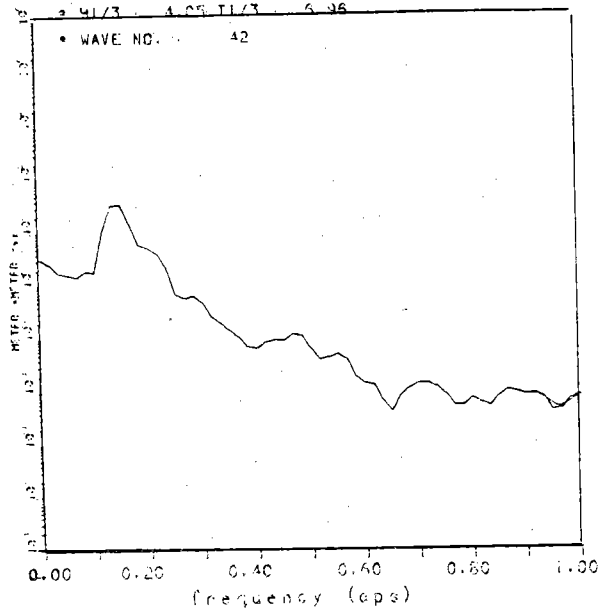
波浪延時及能譜圖

圖 號	時 間	測 站	備 註
XII - 1	86/12/3/1, 86/12/3/3	B	
XII - 2	86/12/7/9, 86/12/7/11	B	

SPTAL DENSITY FUNCTION

• DATE : 1986.12. 3. 1: 0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : B
 • DATA NAME : WATER LEVEL
 • HMAX : 5.05 TMAX : 6.67
 • H1/3 : 4.05 T1/3 : 6.96

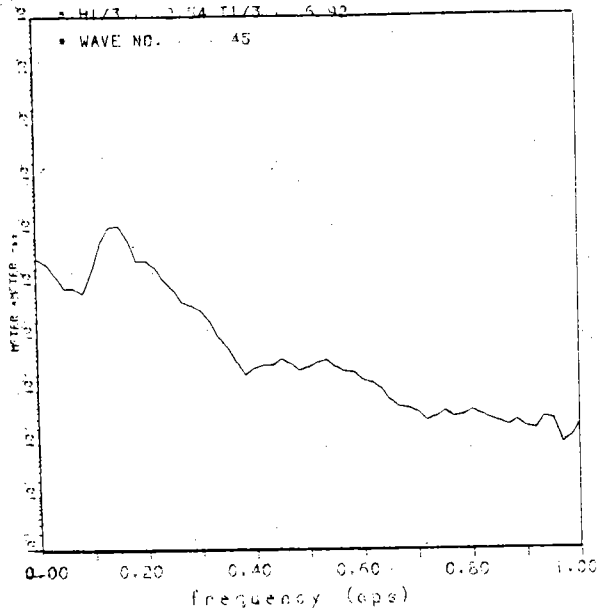
• WAVE NO. : 42



SPTAL DENSITY FUNCTION

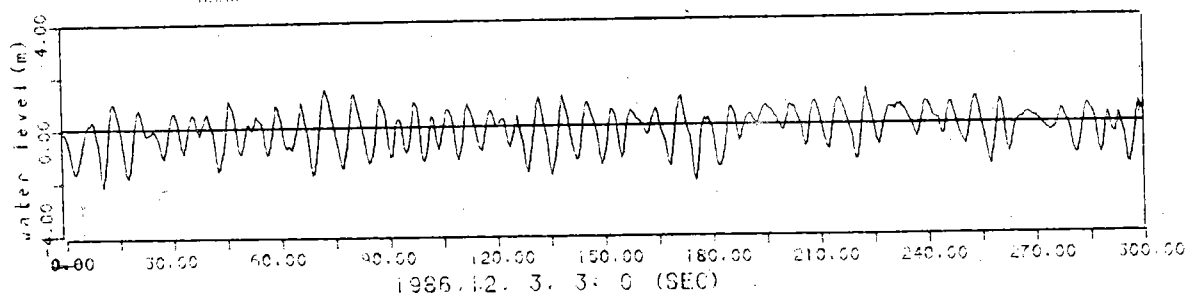
• DATE : 1986.12. 3. 3: 0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : B
 • DATA NAME : WATER LEVEL
 • HMAX : 5.17 TMAX : 7.46
 • H1/3 : 3.94 T1/3 : 6.92

• WAVE NO. : 45



• AREA : TAI-CHUNG HARBOUR
 • STATION : B
 • HMAX : 3.17 TMAX : 7.46 H1/3 : 2.54 T1/3 : 6.92

• WAVE NO. : 45



• AREA : TAI-CHUNG HARBOUR
 • STATION : B
 • HMAX : 5.05 TMAX : 6.67 H1/3 : 4.05 T1/3 : 6.96

• WAVE NO. : 42

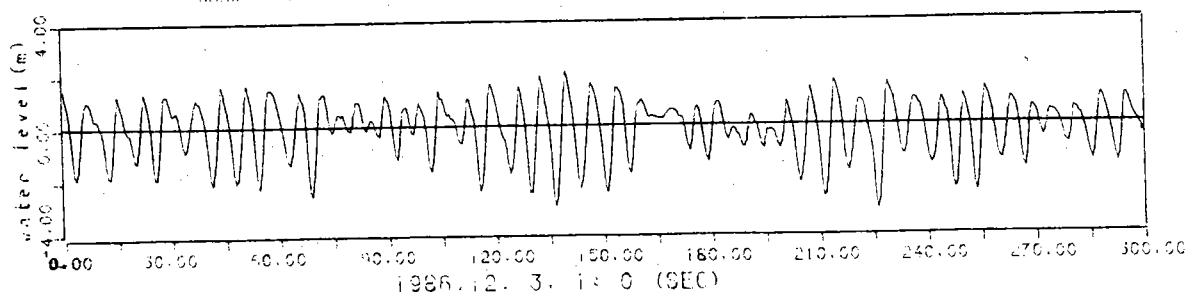
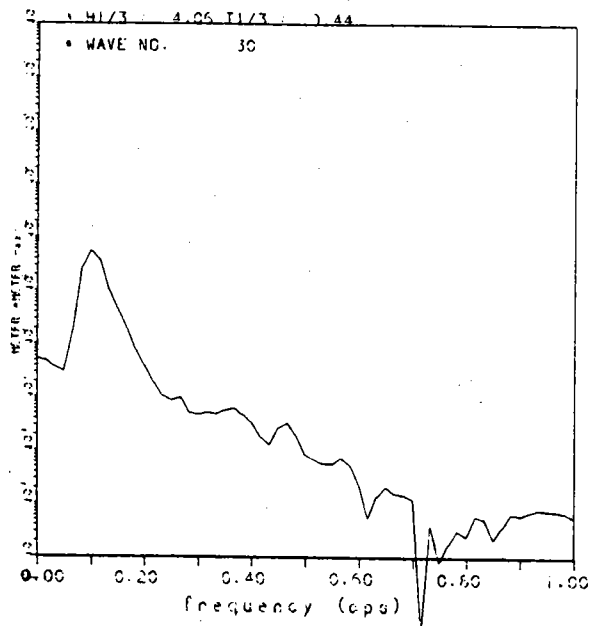


圖 XII - 1

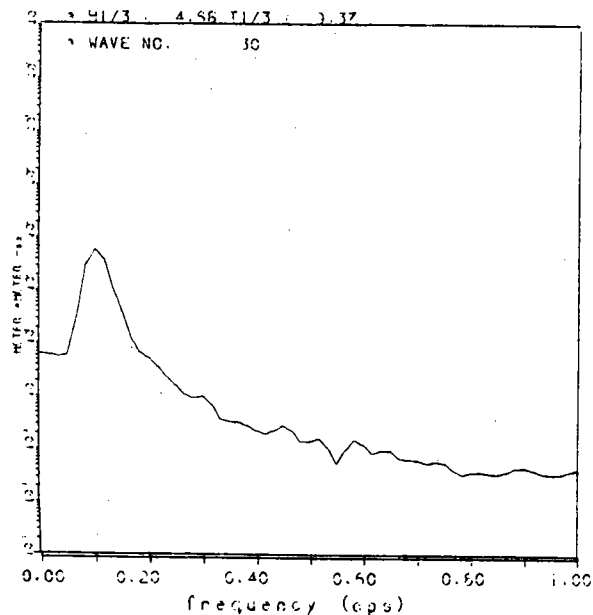
SPTAL DENSITY FUNCTION

• DATE : 1986.12. 7. 9: 0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : 5
 • DATA NAME : WATER LEVEL
 • HMAX : 5.41 TMAX : 9.00
 • H1/3 : 4.05 T1/3 : 3.44

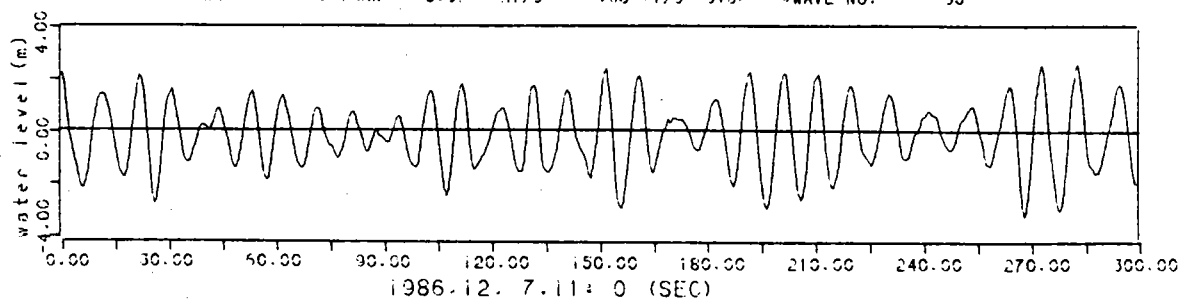


SPTAL DENSITY FUNCTION

• DATE : 1986.12. 7.11: 0
 • AREA TYPE : TAI-CHUNG HARBOUR
 • STATION : 5
 • DATA NAME : WATER LEVEL
 • HMAX : 5.46 TMAX : 8.97
 • H1/3 : 4.56 T1/3 : 3.37



• AREA : TAI-CHUNG HARBOUR
 • STATION : 5
 • HMAX : 5.46 TMAX : 8.97 •H1/3 : 4.56 T1/3 : 3.37 •WAVE NO. 30



• AREA : TAI-CHUNG HARBOUR
 • STATION : 5
 • HMAX : 5.41 TMAX : 9.00 •H1/3 : 4.05 T1/3 : 3.44 •WAVE NO. 30

