摘要

由國際海洋與極地協會(The International Society of Offshore and Polar Engineers，簡稱 **ISOPE**)主辦之國際海洋與極地工程研討會議(Proceedings of the International Offshore and Polar Engineering Conference)由於研討議題廣泛實際、參加國家與人數增多，近年來逐漸成為海洋、海岸工程學界的重要國際盛會之一，參加此項研討會論文與研究報告通常於近海工法和技術、風能量、極地環境、地質、管道和靠泊技術、深海通信技術、雪地科學、動態流體力學、海岸工程等學術與工程技術領域享有盛名。

本年度 **ISOPE** 在日本大阪舉辦第 19 屆研討會議(Proceedings of the Nineteenth (2009) International Offshore and Polar Engineering Conference)，本次研討會議題主要包含近海工法與技術、海洋與海岸工程、大地環境與工程技術、近海和極地之纜線與平臺技術、自動監測與通信技術、海洋氣象等領域，歐美亞洲約有 50 國家、540 篇論文參與發表，我國方面以大學院校為主，包含台大、交大、成大、中山、興大、台灣海洋大學等 10 餘所公私立大學，約 45 篇論文發表，本所港研中心亦以探討臺北港建港完成後可能之港池震盪問題(Study of Harbor Resonance in Future Deployment of Taipei Harbor)，與成大李兆芳教授共同於海岸工程議題場次發表論文。除參與論文研討外，本所港研中心亦就現有業務有關之陣列式雷達遙測系統與橋梁監測系統方面議題，進一步瞭解於工程技術執行可行性之心得交換。

本報告內容計分五章，第一、二章分別為參加本次研討會之目的與研討會行程介紹；第三章則是研討會主要議題與參與發表論文內容說明；第四章為與業務有關之工程技術研討與參觀概況；最後則就參加本次研討會提出心得與建議。

參加 ISOPE 第 19 屆(2009)國際海洋與極地工程研討會

出國報告

目次

第一章 目的

國際海洋與極地工程研討會(Proceedings of the International Offshore and Polar Engineering Conference)是由國際海洋與極地協會(The International Society of Offshore and Polar Engineers，簡稱 **ISOPE**)所主辦的年度性研討會議，主要探討海洋工程、海底油管、海域環境變遷、極地開發等所涉及工程問題，並以提升工程技術與學術交流為其成立宗旨，對外發行學術期刊，為國際海洋工程界之知名協會，多年來促進學術與工程技術交流，提供先進科技對工程界貢獻良多。

此國際海洋與極地協會創始於 1989 年，屬於非盈利之國際科學和教育組織，成立之初共開闢了美國、英國和挪威三個辦公室，而其參加會員資格相當開放，主要是以海洋工程和極地工程相關領域之學者專家所組成。最初會員來自 30 幾個國家成員，目前則已經有超過 50 個國家以上是經常性參與其會務和活動。其主辦國際研討會議的主要目的計有下列三項：

1.加速近海與極地領域相關科學研究及技術的開發，並促成國際合作和共同參與。

2.即時的提供近海與極地領域相關科學新知和資訊的交換。

3.透過協會可以提供從事近海與極地的相關工程，在施工與維護技術上之支援。

自 1991 年至 2008 年，歷屆國際海洋與極地工程研討會議之舉辦國籍及城市則如下表 1.1 所示。

表 1.1 歷屆國際海海洋與極地工程研討會舉辦國籍及城市

年度	屆次	國家	城市
1991	1	United Kingdom	Edinburgh
1992	2	USA	San Francisco
1993	3	Singapore	Singapore
1994	4	Japan	Osaka,
1995	5	Netherlands	Hague
1996	6	California	Los Angeles
1997	7	USA	Honolulu
1998	8	Canada	Montréal

1999	9	France	Brest
2000	10	USA	Seattle
2001	11	Norway	Stavanger
2002	12	Japan	Kitakyushu
2003	13	USA	Honolulu
2004	14	France	Toulon
2005	15	Korea	Seoul
2006	16	USA	San Francisco
2007	17	Australia	Sydney
2008	18	Canada	Vancouver

本年度(2009)則於日本大阪市舉行第 19 屆會議(Proceedings of the Nineteenth (2009) International Offshore and Polar Engineering Conference，Japan Osaka)，本所港研中心與成大李兆芳教授合作，以探討臺北港建港完成後可能之港池震盪問題(Study of Harbor Resonance in Future Deployment of Taipei Harbor)，共同參與論文發表。

依據近年來國際海洋與極地工程研討會議之議題內容及參與盛況觀之，相關海岸工程技術探討、海域環境保護、海象預報發展、自動監測系統研發等，皆和本所港研中心目前執行工作或未來研究方向有極具關連性。藉由論文之發表及與其他國家學者專家研討機會，除可推廣本國研究成果外，並可獲知與擷取別國的研究發展現況，以作為未來相關研究工作推展之借鏡與參考。

第二章 研討會行程

本屆國際海海洋與極地工程研討會舉辦地點是位居主辦國日本(Japan)的本州關西地區大城大阪市(Osaka)，大阪地理位置是位處日本關西大阪府(Kansai Osaka)地區之大阪灣(Osaka Bay)中的一個港都；本次研討會會議場地選擇訂在大阪市北區中之島現代感十足的麗嘉皇家飯店(RIHGA ROYAL HOTELS)大阪國際會館之國際會議廳舉行，該館於 2000 年啟用，整個外型設計像是大積木，也很像是一個機器人，會館所在地交通方面就直接是在阪神電車中之島終點站出口相當方便，其會場建築外觀及內部如圖 2.1 所示，會場簡約隆重氣勢宏偉，可見到主辦單位對於參與本屆研討會貴賓和與會人員的用心和誠意。

圖 2.1　研討會會場及與會情況

按照國際研討會議慣例，會議現場註冊或事先註冊而於現場領取會議相關資料，而由於此次會議期間正值國際新流感，因此大家都謹慎小心。接下去則是會議接待會，算是見面禮的場面。開幕式是國際研討會很重要的儀式，包括此次大會重要內容的宣布，大會的議程改革和往年不同的地方，為此次大會的特色和強調之處。

歡迎晚宴是國際研討會的重頭戲，與會人士大都會參加，也同時頒發獎項和一些人事變動的公告。這次的年會已經是第 19 屆了，出現過第一屆的老臣可能都已退休或者面臨退休，因此 ISOPE 學會也是，顯現出任何組織團體經過一段時間就是要有人事或制度上面的延續或變革，逐代傳承將是一個團體今後的走向和發展很重要因素。我們國內的情形也是一樣，若是忽略了這點，往後則在傳承上面將面臨很大問題，甚至會發生斷代或中止發展的情形。

本屆海海洋與極地領域的學術論文發表與研討會行程，其整體的活動相當緊湊且具知性與感性，研討會主要行程概要如表 2.1 所示。基本上和過去幾年相差不大，新增加的為 sloshing dynamics 這部份，這問題在目前臺中港也有存在，由於強勁風速和風向的關係，港域內的水位堆積在港池一邊，另由於水位的平衡，進而造成水面在港池內振盪，也因而影響到停泊船隻的靜穩性。這個議題或許在未來的會議中，我國也可以有參與的機會。

表 2.1　研討會主要行程概要

日期	行程概要
6/21(日)	15:00 Conference registration 17:00 Welcome reception 報到、研討會委員會議
6/22(一)	9:00 Conference Opening 開幕、工程技術論文發表及研討會議
6/23(二)	論文發表及研討會議
6/24(三)	論文發表及研討會議、研討會晚宴 19:00 Annual Conference Banquet (Cultural Event, Best Paper, Scholarships and Awards)
6/25(四)	論文發表及研討會議；本所港研中心論文即安排 Costal Engineering IX: Estuary & Waves (V.3)發表。
6/26(五)	工程技術參觀、研討會閉幕 Osaka-Kyoto-Nara Tours:

第三章 研討會議題與內容

3.1 研討會議題

本屆研討會論文來自 50 餘國家，投稿者眾多踴躍，經論文審查委員會審議後，接受論文報告約計有 540 篇，分為 4 個會場進行研討及論文發表，分類相關議題計有 9 大類如下：

1.工程技術之提升(Advance in Energy Technology)

2.海洋機具與系統(Offshore Mechanics and Systems)

3.海洋與極地環境保護(Ocean and Artic Environment)

4.雪地工程(Ice Science and Engineering)

5.大地技術與環境工程(Geotechnical and Geoenvironmental Engineering)

6.海洋與極地管路與纜線工程(Offshore and Artic Pipelines，Risers Mooring)

7.自動監測與通訊系統(AUV and Communication)

8.海洋氣象(Metocean)

9.海岸工程(Coastal Engineering)

相關主要發表之論文可參考後頁之附錄 A，其中我國方面以大學院校為主，包含台大、交大、成大、中山、興大、台灣海洋大學等 10 餘所公私立大學，約 45 篇論文發表。由於本屆研討會地點在日本，鄰近亞洲國家之學者專家及亞裔人士參加者眾多，亞洲國家中仍以日本、臺灣、中國、韓國等於海洋、海岸工程界較先進者為多。以本次研討會議題及論文發表內容比較，歐美學者仍以較前進或特殊情況之研究內容具有可參考的趨勢；而亞洲國家中則依各國現有海洋、海岸工程之發展情況而定。依上述研討會議題區分，臺灣與日本仍於大地技術與環境工程、海洋氣象(較偏向波浪監測與特性統計方面)及海岸工程等方面有較多論文發表；而中國與韓國則因近來著力於海洋能源探勘，彼等在海洋機具與系統、海洋與極地管路與纜線工程及自動監測與通訊系統方面有較多著墨之處。

綜觀論之，以亞洲國家於海洋(海岸)工程之研究發展情況比較，日本長期以來即重視於理論建立或工程技術研發，相關科研人才於日本港灣技術研究所(前為政府機關，現已改為財團法人)領軍下，人才輩出且於國際海洋界著有聲望。臺灣方面，原本於理論解析與現場監測亦佔有一席之

地，惟因人才外流與工程技術研發之停滯，漸有時不我予之感。而中國與韓國則因需求關係，其在海洋(海岸)工程技術之研發，則有突飛猛進之趨勢。

3.2 論文發表內容

本所港研中心因計畫工作需要，與成功大學海洋事務研究所李兆芳教授合作，共同探討有關臺北港建港完成後之港池震盪問題。臺北港預定完成之港型如下圖 3.1 所示，由完成之港型成狹長形狀，依據現有花蓮港港池共振經驗，擬於港域未完成前，先行探討有否港池震盪問題產生。

本所港研中心與成大李兆芳教授以共同具名方式，將相關研究成果發表於本屆研討會，論文發表時間為 6 月 25 日之 Costal Engineering IX: Estuary & Waves (V.3)場次，主持人為韓國籍之 Hong, K.Y.博士。當論文發表後，Hong 博士深感興趣和我們交換意見，其謂韓國亦有類似問題，希望有機會可進一步進行兩國學術交流。

相關發表論文之簡報資料可參考後頁之附錄 B。

第四章 工程技術研討與參觀

本屆國際海海洋與極地工程研討會除舉行各研討會議的議程外，另有針對新技術與新科技的開發成果進行發表，用以提供參與者的交流園地。本項工程技術參展的單位甚多，其中以陣列式雷達遙測系統與橋梁監測系統兩項和本所港研中心業務較有密切關連，本所參加人員亦深入探詢與瞭解，相關兩項資訊概述如下。

4.1 陣列式雷達遙測系統

由於本所港研中心承辦基隆港務局之臺北港委辦計畫中，於臺北港現場以商用雷達執行雷達測波工作，因此對相關雷達測波之推展頗有興趣。本項陣列式雷達遙測系統展示係由日本國際航業株式會社(Kokusai Kogyo Co. Ltd.)研發，其於日本的應用情況如圖 4.1 與圖 4.2 所示。

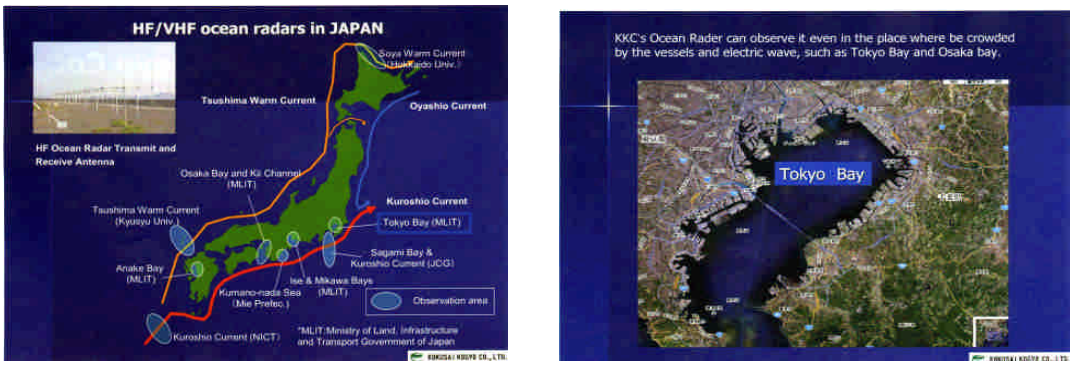

圖 4.1 陣列式雷達測波於日本周邊(左)與東京灣佈置情形

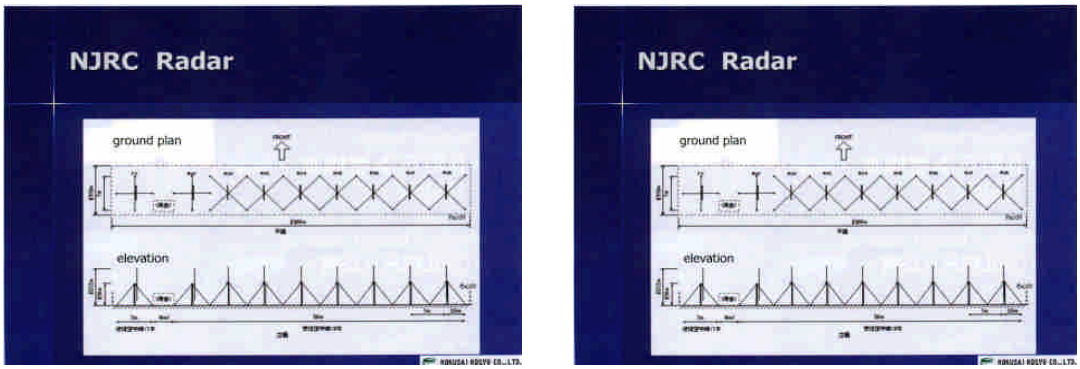

圖 4.2 陣列式雷達天線排列情形

本項陣列式雷達已於日本沿岸佈置多套，以於日本東京灣為例，其除可即時監測波浪與海流外，並可對灣內之污染物進行追蹤監測。

應用雷達監測現場大範圍之海象資料，近來漸有廣泛使用趨勢，目前國際已有之海洋雷達遙測系統特性的比較如表 4.1 所示。

表 4.1 各種海洋雷達遙測系統特性比較表

1	**天線型式**	線性陣列型(Linear Array)	陣列排列型(Array Type)	交叉迴路型(Cross loop)
2	**天線系統架構**	波束組成天線 (Beam Forming) 優點： • 一個焦距(波束)選擇適合面積可得到可信賴資料，甚至在動態海洋環境亦然。 • 每一個畫素有非常清晰與銳利的頻譜。 • 方向性波譜可達海流繪圖範圍的 50%。 • 對外部干擾有較低敏感度。 • 高可靠度、頻道數多。	波束組成天線 (Beam Forming) 優點： • 一個焦距(波束)選擇適合面積可得到可信賴資料，甚至在動態海洋環境亦然。 • 每一個畫素有非常清晰與銳利的頻譜。 • 方向性波譜可達海流繪圖範圍的 50%。 • 對外部干擾有較低敏感度。 • 高可靠度、頻道數多。	方向搜尋天線 (Direction Finding) 優點： • 堅固成束場址幾何配置，安裝簡單。 • 減少硬體成本。 • 360°視野。
		缺點： • +/- 60°視野限制 • 海岸線需較長面積 • 價格較高	缺點： • +/- 90°視野限制 • 海岸線需較長面積 • 價格較高	缺點： • 對外部干擾非常敏感 • 因天線型式變化而有較差準確度 • 不適合於高動態海洋環境 • 不適合於災害警報系統 • 準確度較差
3	**系統架構** **天線數量**	• 波速組成(Beam Forming)：8~16 支天線 • 方向搜尋(Direction Finding)：4 支天線 • 可彈性架構為波速組	• 波速組成(Beam Forming)：8~16 支天線	• 方向搜尋(Direction Finding)：4 支天線 • 無法架構波速組成(Beam Forming)

		成或方向搜尋		
4	**天線安裝面積**	• 發射天線：5m x 1.5m • 接收天線：18m x 5m，20~70m (4 支) • 接收天線：<30~130m (8 支) • 接收天線：40~190m (12 支) • 接收天線：<55~250m (16 支) • 依使用頻率不同所需面積亦不同	HF：70m x 10m (9 支天線) 20m x 10m (4 支天線) VHF：45m x 10m (9 支天線) 30m x 10m (5 支天線) • 依使用頻率不同所需面積亦不同	10m x 10m
5	**週遭環境影響**	因為天線為方向性，天線幾乎不被其背後 或側邊環境影響。	因為天線為方向性，天線幾乎不被其背後 或側邊環境影響。	因為天線為非方向性，必須有充份的高度 與安裝空間，才能避免週遭環境影響。
6	**偵測迴波方向的方法**	其迴波方向乃由多支天線接收到之訊號振 輻與相位經運算處理後得到。	其迴波方向乃由多支天線接收到之訊號振 輻與相位經運算處理後得到。	其迴波方向僅能由兩支交叉天線接收到之 訊號強度比較計算而得之。
7	**觀測角度範圍**	達±60°(方向性)，準確度高。	達 90°(方向性)，準確度中等。	360°(非方向性)，準確度低。
8	**觀測所需時間**	• 每小時僅需觀測 5~15 分鐘。 • 短時間即時觀測觀測是可能的。 • 資料處理時間僅需 1~4 分鐘。	• 每小時僅需觀測 5~10 分鐘。 • 短時間海流觀測是可能的。	• 必須連續觀測 1 小時。 • 由長時間觀測所得資料去作平均。 • 無法作短時間即時觀測與展示。
9	**觀測項目**	• 流速、流向(格網點數據) • 波高、波向(格網點數據) • 波周期 • 方向性波譜 • 風向(風速觀測發展中) • 船舶偵測 • 海上漂流物/浮油追蹤	• 海流(格網點數據) • 波浪(格網點數據)	• 海流(格網點數據) • 波浪僅為某一特定範圍之數據平均值， 無法提供格網點數據。

		• 海嘯預測(發展中)		
10	**天線操作模式**	• 調頻連續波模式 (Frequency Modulated Continuous Wave mode, FM-cw) <u>FM-cw 模式</u> 優點： • 長距離範圍只需最低的發射功率 • 最佳訊雜比，可得到最高時間解析度 • 幾乎與其他無線電使用者沒有干擾 • 最佳時間解析度 缺點： • 需要特別場址幾何配置以提供空間分離 水平>100 m 垂直>10 m	• 調頻連續波模式 (Frequency Modulated Continuous Wave mode, FM-cw) <u>FM-cw 模式</u> 優點： • 長距離範圍只需最低的發射功率 • 最佳訊雜比，可得到最高時間解析度 • 幾乎與其他無線電使用者沒有干擾 • 最佳時間解析度 缺點： • 需要特別場址幾何配置以提供空間分離 水平>100 m 垂直>10 m	• 調頻不連續波模式(FM-i-cw) <u>FM-i-cw 模式</u> 優點： • 可使用整束天線系統 • 對附近的干擾源不敏感 缺點： • 需要較高 RF 功率，在時間域有50%功率會流失，其他重要部份可分配在頻率域。 • 發射能量(虛擬)至附近頻帶會限制其範圍與會干擾其他無線電使用者。
				• 相對低的訊雜比會得到較差的結果。
11	**原始資料格式**	• WERA 資料可與任何雷達資料整合(包含 CODAR 資料)	無法與其他雷達資料整合	無法與其他雷達資料整合

4.2 橋梁監測系統

另一項橋梁監測系統展示則是由日本東京測振株式會社(Tokyo Sokushin Co. Ltd.)提供，其現場監測情形如圖 4.3 所示，另外亦提供日本國內各式橋梁辦理情況如圖 4.4 所示。

圖 4.3 橋梁監測系統現場處理情形

圖 4.4 日本國內各式橋梁之監測處理情形

4.3 工程參觀

本屆研討會為了歡迎國際學術界之貴賓與學者，特別舉辦了各項工程技術與風景古蹟的參觀活動。大阪及神戶港位於大阪內灣，其為大阪內灣的二大港灣港口，是一個造景頗具特色，而且透過高樓建築可以瀏覽整個大阪及神戶港市；週邊的海堤造型簡潔實用，整體景觀規劃完善可供借鏡參考，相關參觀情景如圖 4.5 與圖 4.6 所示。

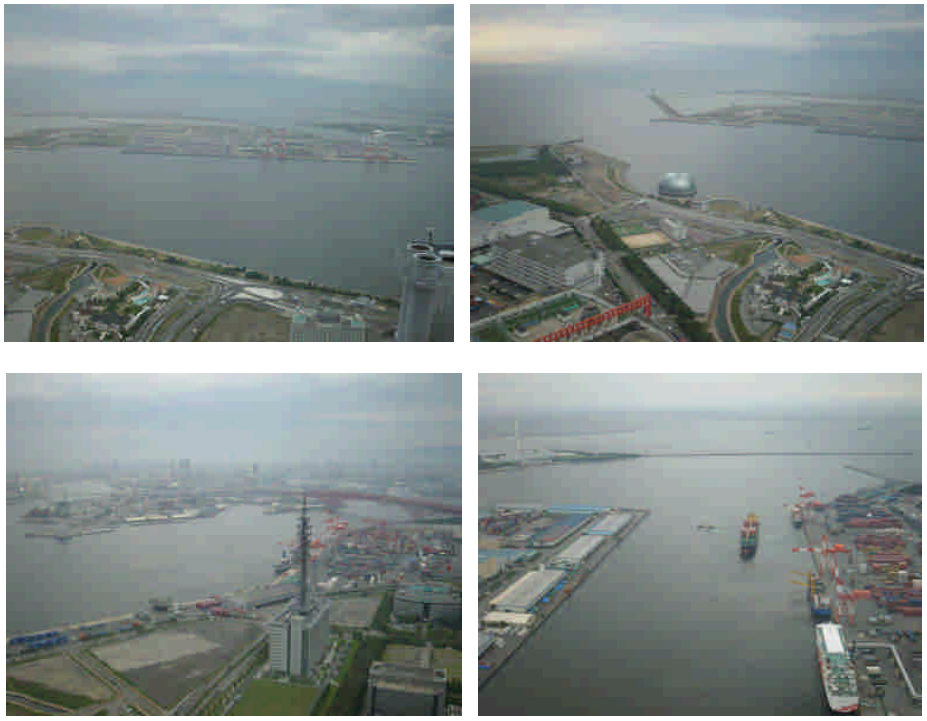

圖 4.5 大阪及神戶港實景

圖 4.6 大阪城廣場實景

第五章 心得與建議

經由上述研討會議題內容與工程技術研討之論述，第 19 屆國際海洋與極地研討會仍保持近幾年國際參與之盛況，各國參與之學者專家亦就有興趣之論文內容交換意見。與國內相關海洋或水利研討會比較，國際性的研討會即具有多樣性，經由參與研討，可瞭解國外近來之研究方向與發展；且由工程技術展示亦獲取與本身業務有關之儀器系統的應用發展。因此，參加相關國際性之研討會對業務、視野或資訊取得有極正面之幫助與提升。

就本屆主要研討議題內容而言，除仍維持近年注重海洋環境保育、海岸防災、生態維護等方向外，針對海洋資源開發之技術及監測方法成為本年度的另一重點。海洋資源開發主要為石油與天氣氣方面，此不但涉及能源自足問題，亦為國家主權象徵之維護，臺灣鄰近國家莫不積極從事。是以，政府機關應有未雨綢繆之舉。

ISOPE 主辦之國際海海洋與極地研討會近年來已成為國際海洋(海岸)界盛事之一，世界各國無不努力爭取會議之主辦權，藉以提昇本國在國際上的學術地位，增進國內的學術風氣。由歷屆主辦國家城市顯示，除了歐美國家外，亞洲國家中日本(3 次)、新加坡(1 次)、韓國 (1 次)皆曾主辦，甚至明年(2010)亦將在中國北京舉行，而我國卻從未爭取主辦此項國際盛會。參加此次盛會後，個人深感政府應積極支持與鼓勵國內海洋工程學界爭取相關的國際研討會主辦權。如此，不僅可增加國際知名度，亦可快速即時的與國際接軌，並進行國際間之合作交流。

本屆研討會共計約有 540 篇論文，而臺灣方面主要以大學的研究論文為主，計約有 45 篇，且主要集中於大地技術與環境工程、海洋氣象與海岸工程等傳統研究方面，這對台灣這個四面環海的島國而言，尚有質與量的不足之感。臺灣號稱要以「海洋立國」，惟以目前國內相關海洋科研、產業與教育方面卻頗有停滯之勢，政府方面亦無積極有效之鼓勵措施，長此下去，往昔臺灣於海洋(海岸)研究方面之優勢，將逐漸消失殆盡。

海洋問題目前仍有很多可以發展的主題，但是無論如何，都需要學者們盡心盡力去踏實的研究，也才能走得穩走得遠。一個國際研討會吸引觀眾蒞臨聽講是成功的關鍵，有時候會議一開始參與者很踴躍，但是到後半段就覺得人數減少太多，會導致會場過於冷清，降低作者報告的興趣和場面的熱烈。大會籌辦和主辦單位在這方面的確是需要想出解決的方法，才能確保會議的成功。

綜合以上心得說明，茲建議以下數點：

1. 為瞭解國外近來之研究方向與發展，以及幫助與提升對業務、視野或資訊之取得，有必要派員參加相關之國際性研討會。

2. 為達到能源自足與維護國家主權象徵，相關政府機關應積極支持與鼓勵，產學界從事海洋資源開發之技術及監測方法。

3. 臺灣標榜以海洋立國，卻從未爭取主辦此項國際盛會，建議在政府支持與鼓勵下，國內海洋工程學界應積極爭取相關的國際研討會主辦權。

4. 為保持臺灣於海洋(海岸)研究方面之優勢，政府相關單位應以積極有效之鼓勵措施，進行相關海洋科研、產業與教育方面之提升，進而完成海洋立國之使命。

附錄 A　研討會主要論文

2009.06.22

1. ADVANCE IN ENERGY TECH I; General (V. 1)

Monday June 22 13:30 Room 1001

Chair: Ayer, R, ExxonMobil Research & Engineering Co., USA

Co-Chair: Marshall, P W, MHP Systems Engineering, USA

Technical Challenges for Heavy Oil Recovery in Deepwater and Arctic Environment

Kim, D S; Shell Global Solutions, Malaysia; Patni, S, SIEP, USA

Unique Perspectives on Tuning of EOS Models for Phase Behavior Prediction of Natural Gas and LPG Bearing Petroleum Reservoir Fluids

Dandekar, A Y, Patil, S L, Univ of Alaska Fairbanks, USA

Oil Sands Forming Model and Character in the Northwest Edge of the Jungar Basin, China

Zhao, Q, He, L R, PetroChina, China

Implications of Load versus Energy Methods on Requalification of Existing Platforms Susceptible to Seismic Loading

Coombs. S, Carone Petroleum Corp; Capanoglu, C, I.D.E.A.S., USA

Platform Life Extension by Inspection

Marshall, P W, MHP Systems Engineering; Capanoglu, C, I.D.E.A.S., USA

Load Patterns for Seismic Pushover

Capanoglu, C, I.D.E.A.S.; Marshall, P W, MHP Systems Engineering, USA

Pressure-Sinkage Model Based on Seabed Soft Sediments

Wu, H, Chen, X, Gao, Y, Changsha Inst of Mining Research; He, J, Liu, S, Ding, L, Central South Univ, China

Comparison of ISO and API Seismic Design Requirements for Offshore Structures

Peng, B-F, J Ray McDermott Engineering; Ghoneim, G M, Det Norske Veritas (USA), USA

2. SBD I: Material Modeling & Specifications (V. 4)

Monday June 22 13:30 Room 1002

Chair: Lillig, D B, ExxonMobil Development Co., USA

Co-Chair: Besson, J, MINES ParisTech, France

Micromechanical Analysis on Deformation Behavior of Dual-phase Steels for Strain-based Design

Ishikawa, N, Sueyoshi, H, Shikanai, N, JFE Steel, Japan

Tensile Properties and Microstructure of Girth Welds for High Strength Linepipe

Hamada, M, Hirata, H, Shitamoto, H, Sumitomo Metal Industries, Japan

Anisotropic Strain Aging Behavior of High Strength UOE Linepipe

Nagai, K, Sakamoto, S, Tsuru, E, Asahi, H, Hara, T, Nippon Steel, Japan

Effects of Strain-Aging on the Mechanical Properties of High Grade Pipeline Steels

Chen, H Y, Ji, L K, China National Petroleum, China

Material Specifications for Strain-Based Design of Pipelines

Wang, Y Y, Liu, M, CRES, USA; Gianetto, J, CANMET, Canada

Weld and HAZ Microstructure and Property Analysis for Strain-Based Design

Chen, Y S, Wang, Y Y, CRES, USA

3. HPM I: Instrumented Indentation (V. 4)

Monday June 22 13:30 Room 1004

Chair: Kwon, D I, Seoul National Univ, Korea

Application of the Instrumented Indentation Technique to Estimate Mechanical Properties

Kim, Y C, Kim, K H, Kwon, D I, Seoul National Univ, Korea

Assessment of Mechanical Properties in Thin Film Deposits by Instrumented Indentation

.Jin, H W, Bangaru, N R, Ayer, R, Ozekcin, A, ExxonMobil Research & Engineering Co., USA; Kwon, D I, Choi, M J, Seoul National Univ, Korea

Evaluation of Residual Stress Directionality by Knoop Indentation Technique

Choi, M J, Kang, S K, Kang, I G, Kwon, D I, Seoul National Univ, Korea

Analysis of Plastic Characteristics of Nanocontacts through a Deformed Volume Measurement

Lee, Y H, Park, J S, Nahm, S H, Korea Research Inst of Standards & Science; Yoon, K B, ChungAng Univ, Korea

Stress-strain Relationship in Microstructural Region Using Triangular Pyramidal Indenter

Mochizuki, M, Higuchi, R, Toyoda, M, Osaka Univ, Japan

Aging Assessment Using Instrumented Indentation Technique for Heater Tubes of Power Plants

Ro, D S, Frontics, Korea

A Study for the Reliability Assessment of the Liner Products during Manufacturing Process on Type %1 Fuel Cylinders of CNG

Lee, M H, Choi, S C, Ha, J C, Korea Gas Safety, Korea

Fracture Toughness Measurement of 2.25Cr-1Mo Pipes using Instrumented Indentation Technique

Jung, G H, Shell Global Solutions, USA; Lee, K W, Seoul National Univ, Korea

4. COASTAL ENGINEERING I: Waves & Modeling 1 (V. 3)

Monday June 22 13:30 Room 1006

Chair: Lalli, F, APAT, Italy

Forecast of a Benthic Extreme Current Along a Pipeline Route

McClimans, T A, Eidnes, G, SINTEF; Moshagen, H, BHM Engineering Services, Norway

Sea Level Fluctuation at East Asia Coasts

Doong, D J, National Taiwan Ocean Univ, Taiwan, China; Fröhle, P, Univ of Rostock, Germany; Lee, B C, Huafan Univ, Chuang, L Z H, Kao, C C, National Cheng Kung Univ, Taiwan, China

Measurement of Coastal Waves Using Stereo Matched Image Sequences

Arita, M, Deguchi, I, Osaka Univ, Japan

Characteristics of Yorimawari-Nami, Peculiar Japan-Sea Low Frequency Swell, Observed by NOWPHAS Seabed Wave Gauge Network

Nagai, T, Hiraishi, T, Kawai, H, Kawaguchi, K, Port and Airport Research Inst; Nihei, A, Ohkama, T, Ministry of Land,

Infrastructure, Transport and Tourism, Japan

Research of Wave Crest Height on Pillar Wharf

Chen, H B, Tianjin Univ; Liu, H Y, Zheng, B Y, Tianjin Research Inst for Water Transportation Engineering, China

Estimation of Wave Breaking in Gravel Beach Using Artificial Neural Network

Lee, K H, Mizutani, N, Fujii, T, Nagoya Univ, Japan; Kim, D S, Korea Maritime Univ, Korea

5. ENVIRONMENT I: Oil Spill (V. 1)

Monday June 22 13:30 Room 1102, 11F

Chair: Otsuka, K, Osaka Prefecture Univ, Japan

Co-Chair: Pavlenko, V I, Arctic Research Center, Russia

Oil Spill Modeling at Shuweihat Power & Desalination Plant

Mohamed, K A, Abu Dhabi Water & Electricity Authority, United Arab Emirates

Field Experiment of a Spilled Oil Tracking Autonomous Buoy

Senga, H, Kato, N, Niou, H, Hiratsuka, M, Takagi, S, Osaka Univ; Yoshie, M, Fujita, I, Port and Airport Research Inst, Japan

At-Sea Trial 1 Test of an Autonomous Buoy which Tracks Drifting Oil and Observation of In-Situ Data Tracking Drifting Markers on the Sea for Predicting Location of the Spilled Heavy Oil

Yoshie, M, Matsuzaki, Y, Fujita, I, Takezaki, K, Port and Airport Research Inst; Kato, N, Senga, H, Osaka Univ; Tanaka, T, Port and Airport Research Inst, Japan

Hydrodynamics Analysis of Spilled Oil Tracking Buoy Based on Spilled Oil Model Improved

Wang, T L, Liu, Y D, Dalian Maritime Univ, China

Fundamental Study on Shore Contamination by Polystyrene of Marine Debris - Investigations of Hachijo and Ogasawara Islands in Japan

Iwai, N, Sato, H, Saido, K, Makoto, K, Nihon Univ, Japan

Parametric Study on Oil Spilling from Damaged Liquid Cargo Tank

Lu, J S, Wen, X F, Liu, Z C, Zhejiang Ocean Univ; Wu, W Q, Dalian Maritime Univ, China

6. AUV, ROBOTICS & COMMUNICATION I (V. 2)

Monday June 22 13:30 Room 1101, 11F

Chair: Marani, G, Univ of Hawaii, USA

The Estimation and Correction of Sensor Bias Errors in the Inertial Navigation

Ishibashi, S, Yoshida, H, Hyaku, T, Sawa, T, JAMSTEC, Japan

Iterative Scheme for Estimating Sensor Misalignments in a USBL Positioning System

Chen, H H, Chang, H K, Jang, J P, Wu, J Y, National Sun Yat-Sen Univ, Taiwan, China

The Contribution of Hydrospheres Processes in Level of Microstrains of Earth Crust

Dolgikh, S G, V.I. Il'ichev Pacific Oceanological Inst, FEB Russian Academy of Sciences (RAS), Russia

Benchmarking of Optimal Acoustic Search Path Planning

Cho, J H, Kim, J S, Korea Maritime Univ; Kim, S I, Agency for Defense Development, Korea

Application of Laser-Interference Methods to Oceanologic and Hydroacoustic Research

Shvets, V A, V.I. Il'ichev Pacific Oceanological Inst, FEB RAS, Russia

Sound Speed and Attenuation Measurements in Saturated Glass Beads

Park, E K, Lee, K H, Seong, W J, Seoul National Univ, Korea

7. ADVANCE IN ENERGY TECH I; Gas Hydrates (V. 1)

Monday June 22 16:20 Room 1001

Chair: Kim, D S; Shell Global Solutions, Malaysia

Co-Chair: Komai, T, AIST, Japan

A New Mathematical Model of Gas Hydrate Dissociation and its Application on a Hydrate Reservoir Underlain by a Gas Zone

Bai, Y H, Li, Q P, China National Offshore Oil Corp, China

A Mathematical Model for Dissociation of Gas Hydrate

Lu, X B, Wang, S, Zhang, X, Inst of Mechanics, CAS, China

Relation between Pore Size Distribution and Permeability of Sediment

Minagawa, H, Takahara, N, Sakamoto, Y, Komai, T, Yamaguchi, T, Narita, H, AIST; Mizutani, K, Ohga, K, Hokkaido Univ, Japan

Experimental Investigation of Methane Hydrate Reformation under Dissociation Process

Ahn, T W, Seoul National Univ; Lee, J Y, Korea Inst of Geoscience & Mineral Resources; Park, C H, Kang, J M, Seoul National Univ, Korea

Study on Mechanism of Methane Hydrate Replacement by Carbon Dioxide Injection

Seo, Y, Kang S P, Korea Inst of Energy Research, Korea

Strain Rate Dependency of Peak and Residual Strength of Sediment Containing Synthetic Methane Hydrate in Triaxial Compression Test

Miyazaki, K, Masui, A, AIST; Yamaguchi, T, Toho Univ; Sakamoto, Y, Haneda, H, Ogata, Y, AIST, Japan; Aoki, K, Inst of Mining Science and Tech, Vietnam

The Effects of Gas Hydrate Dissociation on the Stability of Pipeline in Seabed

Wang, S Y, Zheng, W, Lu, X B, Inst of Mechanics, CAS; Li Q, COOEC, China

Gas Recovery from Gas Hydrate Bearing Sediments by Inhibitor or Steam Injection Combined with Depressurization

Kawamura, T, Ohtake, M, Sakamoto, Y, Yamamoto, Y, Haneda, H, Komai, T, National Inst of Advanced Industrial Science and Tech; Higuchi, S, Nihon Axis, Japan

The Experimental Study of the Natural Gas Hydrate's Dynamic Control Method in Subsea Multiphase Flow Pipeline

Li, Q P, Yao, H Y, CNOOC; Yang, X J, Daqing Oilfield Construction Design & Research Inst, China

8. COASTAL ENGINEERING II: Waves & Modeling 2 (V. 3)

Monday June 22 16:20 Room 1006

Chair: Jeng, D S, Univ of Dundee, UK

Co-Chair: Loukogeorgaki, E, Aristotle Univ. of Thessaloniki, Greece

Model Equation for Nonlinear Water Waves Propagating in Permeable Structure

Hu, K C, Hsiao, S C, Hwung, H H, National Cheng Kung Univ, Taiwan, China

A Nonlinear Ordinary Differential Equation for Ocean Gravity Wave

Shin, J R, Daewoo Shipbldg & Marine Engineering; Choi, K S, Kang, S Y, Korea Maritime Univ, Korea

Improvement of Partial Reflection Boundary on Boussinesq-Type Wave Transformation Model

Hirayama, K, Port and Airport Research Institute, Japan

DRBEM Solution of Extended Mild-slope Equation for Waves around a Circular Island on a Polynomial Shoal

Hsiao, S S, National Taiwan Ocean Univ; Wen, C C, Hungkuang Univ; Chang, C M, National Taiwan Ocean Univ, Taiwan, China

Hamiltonian Formulation for Water Waves over a Variable Bottom: Asymptotic Models and Numerical Simulations

Guyenne, P, Univ of Delaware, USA; Craig, W, McMaster Univ; Sulem, C, Univ of Toronto, Canada

Shock-Capturing Boussinesq Model for Wave Breaking Simulation

Tonelli, M, Terri, M, Universitá degli Studi di Udine, Italy

Solutions of Kinematic-Dynamic Elements for Short Edge Waves on a Plane Sloping Bottom

Zhang, Y, Hong, G W, Feng, W B, Hohai Univ, China

A Wave Equation Induced from Double Integral Method

Kim, H S, Jung, B S, Jang, C H, Kookmin Univ, Korea; Hall, K R, Queen's Univ, Canada

9. ENVIRONMENT II: Resource & Energy in Ocean & Arctic (V.1)

Monday June 22 16:20 Room 1102, 11F

Chair: Koterayama, W, Kyushu Univ, Japan

Formation and Diffusion Models of CO_2 Hydrate

Sato, T, Nojiri, T, Univ of Tokyo; Ikegawa, Y, Central Research Inst of Electric Power Industry, Japan

Environmental Opportunities and Risks, and Ecological Designs, of Offshore Renewable Energy Installations

Wilhelmsson, D A, Stockholm Univ, Sweden; Lundin, C G, World Conservation Union, Switzerland

Forecasting of Environmental Parameters Changes Related to Hydrocarbon's Exploitation in Russian Arctic

Pavlenko, V I, Glukhareva, E K, Arctic Research Center, Russia

Metamorphosis of Single Crystalline Hematite to Iron Sulfides Influenced by Sulfate-Reducing Bacteria

Zhao, X, Yang, J, Zhejiang Ocean Univ, China

Distribution Characteristics of Chemosynthetic Community around Seafloor Massive Sulfide Deposit

Yamazaki, T, Ikemoto, M, Nakatani, N, Osaka Prefecture Univ, Japan

Material Properties of Ductile-Fiber-Reinforced Cementitious Composite Using Pyroclastic Flow Deposits

Watanabe, K, Fujii, M, Asai, Y, Arai, J M, Tokai Univ, Japan

10. AUV, ROBOTICS & COMMUNICATION II (V. 2)

Monday June 22 16:20 Room 1101

Chair: Patrikalakis, N.M., Massachusetts Inst of Technology, USA

Multidisciplinary Design Optimization of Underwater Gliders Based on Surrogate Models

Tao, G H, Qiang, H Z, Cheng, Y J, Yang, L, Shenyang Inst of Automation, CAS, China

The Turning Simulation for an Underwater Glider Using CFD

Choi, H S, Seo, D C, Lee, H, Seoul National Univ, Korea

Energy Efficient Distributed Target Tracking Algorithm in Underwater Wireless Sensor Networks

Yu, C H, Lee, K H, Choi, J W, Park, M K, Pusan National Univ; Song, T L, Hanyang Univ, Korea

Modeling of Hovering AUV Testbed and Design of ACE/TAO RTESBased Open Control Platform

Binugroho, E H, Ha, T K, Seo, Y B, Choi, J W, Ko, N G, Pusan National Univ, Korea

Development of an Underwater Vehicle that Has Functions of Acquisition and Tracking Target Objects Using Images Acquired by Itself

Tanaka, T, Yoshie, M, Port and Airport Research Inst; Oosato, M, Ministry of Land, Infrastructure, Transport and Tourism, Japan

2009.06.23

11. GEOTECH I: Cyclic Loading & Liquefaction (V. 2)

Tuesday June 23 08:00 Room 1001

Chair: Uchida, K, Kobe Univ, Japan

Undrained Behavior of Surface Footings Subjected to Combined V-H-T Loading

Yun, G J, Maconochie, A, Oliphant, J, Technip; Bransby, F, Univ of Dundee, UK

Experimental Study on Dynamic Shear Modulus of Saturated Sands under Complex Initial Stress States

Shi, D D, Shanghai Maritime Univ; Guo, Y, Luan, M T, Dalian Univ of Tech, China

Role of Fines on Dynamic Shear Stiffness for a Volcanic Soil Shirasu

Hyodo, T, Waseda Univ; Hyodo, M Yamaguchi Univ; Yamada, S, Univ of Tokyo, Japan

Effective Stress Based Dynamic Analysis on the Interaction between Group-Pile Foundation and Liquefied Ground

Yokawa, H, Tanabe, A, Yashima, A, Sawada, K, Gifu Univ, Japan

Liquefaction and Its Influence to House Damage in the Niigataken Chuetsu-Oki Earthquake in 2007

Ohtsuka, S, Isobe, K, Nagaoka Univ of Tech; Hayashi, K, Oyo Corp; Hirade, T, Building Research Inst, Japan

A CPT-based Evaluation Method of Liquefaction Probability via Genetic Algorithms

Lee, Y F, Chi, Y Y, Chang Jung Christian Univ, Taiwan, China

Potential Risks of the Ground near Old River Alignments

Okuda, M, Okuda Construction; Kani, Y, Nippon Concrete Industries; Nakane, Y, Showa Concrete Industries; Hayakawa, K, Ritsumeikan Univ, Japan

Old Ridge Road Used as the Fail-safe Path

Okuda, M, Okuda Construction; Kani, Y, Nippon Concrete Industries; Nakane, Y, Showa Concrete Industries; Hayakawa, K, Ritsumeikan Univ, Japan

12. COASTAL ENGINEERING III: Wave-Structure 1 (V. 3)

Tuesday June 23 08:00 Room 1006

Chair: Chen, H-C, Texas A&M Univ, USA

Study on the Wave Energy Decayed by Inclined Plates

Chen, W J, Chien, K T, Dai, S Y, National Chiyi Univ, Taiwan, China

Numerical Study of Regular and Irregular Wave Overtopping Including the Effect of Sea Level Rise

Yan, S, Kojima, H, Kyushu Univ, Japan

Jacket-Type Breakwaters with Water Chambers in Deep Sea

Kouno, T, Nakamura, T, Ehime Univ, Japan

Hydrodynamic Characteristics of Slit Caisson Quay Wall against the Oblique Wave Incidence

Ko, K O, Kim, G W, Ji, H W, Park, K Y, Hyundai Development Inst of Construction Tech, Korea

Spectral Analysis of Unidirectional Wave Slamming on the Three-Dimensional Structure in the Splash Zone

Ding, Z, Ren, B, Wang, Y X, Dalian Univ of Tech, China

An Experimental Study on the Wave Reducing Performance of the Flat Plate Type Wave Absorbing Structure

Hadano, K, Koirala, P, Yamaguchi Univ; Ikehata, Y, Nippon Bunri Univ, Japan; Shin, M S, Kunsan National Univ, Korea; Sakatani, Y, Yamaguchi Univ, Japan

Pro-Environmental Wave Barrier by N Porous Bottom-Mounted Vertical Circular Cylinders

Cho, I H, Cheju National Univ, Korea; Kim, M H, Texas A&M Univ, USA

Tuesday June 23 08:00 Room 1007

Plenary Presentation II (V 2)

Progress in Modeling of Multiphase Flows and Thermodynamics in Oil and Gas Pipelines

Hellan, Ø, Johansen, S T, Dijkhuizen, W, Mo, S, Meese, E, SINTEF, Norway; Bansal, K, Danielson, T, ConocoPhillips; Goldszal, A, Monsen, J I, Total Introduction by Paulsen, G, Reinertsen Engineering, Norway

Keynote Presentation II (V 2)

Technical Challenge in Sakhalin 1 Pipeline Project: Engineering and Construction of Offshore Pipeline, Orlan Erosion Protection and Cathodic Protection

Tokiwa, Y, Nagahamaya, S, Sakamoto, T, Nippon Steel, Japan Introduction by Osawa, N, Osaka Univ, Japan

13. ENVIRONMENT III: Numerical Modeling (V. 1)

Tuesday June 23 08:00 Room 1102

Chair: Kyozuka, Y, Kyushu Univ, Japan

Application of Data Mining in Simulating Marine Algal Dynamics

Chau, K W, Hong Kong Polytechnic Univ, Hong Kong, China

Study of Conceptual Model on Marine Aquaculture Ecosystem Health Assessment

Cai, H W, Zhao, S, Tang, Z, Ren Y H, Zhejiang Ocean Univ, China

Hydrodynamic Modeling of Water Exchange in a Small Estuary of Haomeiliao Wetland, Chiayi, Taiwan

Hsu, HC, Liou, J Y, Huang, H Y, National Cheng Kung Univ, Taiwan, China

Variability of Primary Production of the Okhotsk Sea in Late Pleistocene and Holocene

Bosin, A A, V.I. Il'ichev Pacific Oceanological Inst, FEB RAS, Russia

Simulations of Currents, Temperature, and Salinity in Manila Bay by a Hydrodynamic Model

Olivares, R U, Tabeta, S, Hakuta, K, Univ of Tokyo, Japan

SST Variation/Change in the Coastal Region of the East China Sea in the Last 50 Years

Zhang, J L, Chen, M C, National Marine Data and Information Service; Chen, M X, Ocean Univ of China; Zuo, J C, Hohai Univ, China

14. AUV, ROBOTICS & COMMUNICATION III: AUV & Multiple Vehicle (V. 2)

Tuesday June 23 08:00 Room 1101

Chair: Yu, S C, Pusan National Univ, Korea

Autonomous Underwater Vehicle Engineering for Detailed Deep Seafloor Survey in JAMSTEC

Tsukioka, S, JAMSTEC, Japan

Path Control of AUV "MR-X1" Using Thrusters

Nakamura, M, Kyushu Univ; Hyakudome, T, Yoshida, H, Aoki, T, JAMSTEC, Japan

Design of Controller for Cruising AUV "URASHIMA"

Hyakudome, T, Nakamura, M, Tsukioka, S, Sawa, T, Watanabe, K, JAMSTEC, Japan

Multi-Vehicle Oceanographic Feature Exploration

Ooi, B H, Zheng, H, Cho, W, Singapore-MIT Alliance for Research and Tech; Dao, M H, Zemskyy, P, Tkalich, P, National Univ of Singapore; Patrikalakis, N M, Singapore-MIT Alliance for Research and Tech, Singapore

Development of 3D Visual Landmark Recognition Method for AUVs /Localization

Yu, S C, Kang, D J, Choi, J W, Park, M K, Pusan National Univ, Korea

15. HYDRODYNAMICS IV: CFD 4 & MetOcean (V. 3)

Tuesday June 23 10:30 Room 1008

Chair: Soukissian, T H, Hellenic Centre for Marine Research, Greece;

Co-Chair: Nagai, T, Port and Airport Research Inst, Japan

Spatio-Temporal Behaviour of Wind and Sea States in the Hellenic Seas

Soukissian, T H, Hellenic Centre for Marine Research, Greece; Tzortzi, E, Univ of Southampton, UK; Kokkali, A, Univ of Aegean, Greece

A Numerical Simulation Method of Typhoon Waves

Zhu, Z, Yang, Y, Zhou, K, Shanghai Jiao Tong Univ, China

Wave Height Forecasting Using Self-Organization Algorithm Model

Tsai, T M, Yen, P H, Huang, T J, National Cheng Kung Univ, Taiwan, China

Characteristics of Infragravity Waves Observed Along Japanese Coasts

Nakai, K, ECOH Corp; Noriaki, H, Kyushu Univ, Japan

Experiment in Area of the Mouth of Izmenchivoe Lake

Kovalev, P D, Inst of Marine Geology and Geophysics, RAS; Kurkin, A A, Novgorod State Technical Univ; Shevchenko, G V, Inst of Marine Geology and Geophysics, RAS; Chernov, A G, Nizhny Novgorod State Technical Univ; Kovalev, D P, Gorbunov, A O, Sakhalin State Univ, Russia

Observed Tidal Currents and the Characteristics of Principal Tidal Constituents in the South China Sea Deep Basin in 1997-1999

Zhang, T, First Inst of Oceanography; Li, P, Zhao, W, Zuo, J, Ocean Univ of China, China

Decadal and Long-Term Sea Level Variations at Pacific Coast of Japan

Gu, X L, Li, P L, Ocean Univ of China, China

Hydrodynamic and Thermohaline Circulation Model and Its Application

Abualtayef, M T, Kuroiwa, M, Khaled Seif, A, Matsubara, Y, Tottori Univ, Japan

16. GEOTECH II: In-Situ Test (V. 2)

Tuesday June 23 10:30 Room 1001

Chair: Chien, L K, National Taiwan Ocean Univ, Taiwan, China

Co-Chair: Hayakawa, K, Ritsumeikan Univ, Japan

Direct Shear Test Modeling of Crushed Stone Material Using DEM Approach

Cho, N, Seoyeong Engineering; Lee, D, Korea Inst of Construction Tech; Yoo, C, Sungkyunkwan Univ, Korea

Evaluation of the Lateral Behavior of Monopiles Based on Back Analysis of Full-Scale In-Situ Tests

Fakher, A, Sadeghi-Hokmabadi, A, Seyfi, H, Univ of Tehran, Iran

Analyses of Compaction Efficiency of Sand with Water - Field Pilot Test and Numerical Analysis

Chun, B S, Hanyang Univ; Jang, Y S, DongGuk Univ; Do, J N, Hanyang Univ, Korea

Disc Shear of Loose Sands in a Test Tank

Feng, T W, Huang, Y H, Chung Yuan Christian Univ, Taiwan, China

Case Study of the Application of In-situ Geological Mapping and 2Dresistivity Image Exploration for the Colluviums Slope

Jeng, C J, Hung, C S, Shieh, C Y, Huafan Univ, Taiwan, China

Qualitative Investigation of Train-Induced Ground Vibrations Using FEM and Field Experiments

Ju, S H, National Cheng Kung Univ, Taiwan, China

Field Test on Lightweight Thrust Restraint for Buried Bend

Kawabata, T, Hanazawa, T, Sawada, Y, Izumi, A, Kashiwagi, A, Uchida, K, Kobe Univ; Shigenaka, A, Banno, I, Japan Water Agency, Japan

The Effects of Horizontal Hardness on the Seismic Performance of Wooden Houses

Hayakawa, K, Edane, K, Honda, S, Koushige, N, Ritsumeikan Univ, Japan

17. HPM III: Adv Materials & Structures 1 (V. 4)

Tuesday June 23 10:30 Room 1004

Co-Chair: Kim, K-Y, POSTECH, Korea

Durability Evaluation of Marine and Offshore Structures

Kovalenko, R G, Kim, L V, Far Eastern State Technical Univ, Russia

Comparative Study on Estimation Techniques for Local Stress of Web Stiffened Cruciform Connections

Osawa, N, Sawamura, J, Fujiwara, T, Nagai, H, Osaka Univ, Japan

Stability Analysis of Planar Crack Front

Lin, Y Y, Yang, C S, National Cheng Kung Univ, Taiwan, China

The Investigation on the Loading Capacity of Cross-Shaped Cast Joints for Reticulated Shell

Wang, Y Q, Xiong, J, Shi, Y J, Li, G X, Luo, Y, Tsinghua Univ, China

Meshless Numerical Simulation of Crack Growth Induced by Stress-Assisted Corrosion in a Brittle Solid

Tang, Z, Zhejiang Ocean Univ, China

Fatigue Strength Assessment of Extra Thick Welded Joints in Offshore Structures

Liu, G, Huang, Y, Wu, K, Dalian Univ of Tech, China

A Case Study of Fatigue Cracks in Orthotropic Steel Bridge Decks

Pan, P, Zhou, Y, Li, Y S, Wang, Y Q, Tsinghua Univ, China

Stress Distribution of Orthotropic Steel Bridge Decks under Vehicle Wheel Loading

Li, Y S, Shijiazhuang Railway Inst; Cui, C, Wang, Y Q, Pan, P, Tsinghua Univ, China

18. COASTAL ENGINEERING IV: Wave-Structure 2 (V. 3)

Tuesday June 23 10:30 Room 1006

Chair: Araki, S, Osaka Univ, Japan

Co-Chair: Yim, J.Z., National Taiwan Ocean Univ, Taiwan, China

A Solution of the Mild-Slope Equations for Waves Scattering by a Circular Island on a Shoal

Cheng, Y M, Lee, J A, National Cheng Kung Univ, Taiwan, China

Response of a Layered Seabed to Ocean Waves around Breakwater Heads

Ou, J, Jeng, D S, Univ of Dundee; Chan, A H C, Univ of Birmingham, UK

On Studies of Wave Interaction with Porous Structures

Hsieh, C M, National Kaohsiung Marine Univ; Hwang, R R, Academia Sinica, Taiwan, China

Shallow Water Flow: Numerical Simulations, Laboratory and in-situ Measurements [Oral Presentation]

Lalli, F, Bruschi, A, Lama, R, Liberti, L, Mandrone, S, Pesarino, V, ISPRA; Ciarravano. A. Miozzi, M, INSEAN; Romano. G P, Univ degliStudi di Roma :La Sapienza; Verzicco, R, Univ degli Studi di Roma "Tor Vergata", Italy

Nonlinear Surface Waves Propagation on Sloping Bottoms in Lagrangian Coordinates

Chen, Y Y, Li, M S, Hsu, H C, Yang, K S, National Sun Yat-Sen Univ, Taiwan, China

Experimental Study of Turbulent Round Jet Discharged into Regular Waves

Hsu, T W, Lin, J F, National Cheng Kung Univ, Taiwan, China

19. PIPELINES & RISERS III: Risers & Mooring (V. 2)

Tuesday June 23 10:30 Room 1007

Chair: Park, H I, Korea Maritime Univ, Korea

Co-Chair: Morandini, C, AMOG Consulting, Australia

Clawloks™ - Development of a Bending Stiffener Latching Mechanism for Flexible Riser

Gjersoe, N F, LICenginieering; Thomsen, J R, NKT Flexibles, Vinther, J, LICengineering, Denmark

Risk Analysis Carried Out on Old Unbonded Flexible Pipe Assets

Balagué, B, Roques, J P, Furmanowski, Y, Total SA, France

Effect of Pipe Thickness on the Behavior of Flexible Pipes with Equivalent Bending Ring Stiffness

Kawabata, T, Nadamoto, Y, Izumi, A, Shimamoto, C, Inoue, K, Uchida, K, Kobe Univ, Mohri, Y, Ariyoshi, M, National Inst for Rural Engineering, Japan

Fit-For-Purpose Tool in the Design Verification Process for Floating Structures: Design of Statically Equivalent Deepwater Mooring Systems

Udoh, I I, Mercier, R, Texas A&M Univ, USA

Tension-Twist Testing of EM Cables and Wire Rope

Knapp, R H, Shimabukuro, T S, Structural Solutions, USA

Semi-Empirical Modeling for Seawater Corrosion of Wire Rope

Fontaine, E, Armstrong, R, Potts, A; AMOG Consulting; Melchers, R E, Univ of Newcastle, Australia; Chaplin, C R, Univ of Reading, UK; Francois, M, Bureau Veritas, France

20. ENVIRONMENT IV: Water Quality (V. 1)

Tuesday June 23 10:30 Room 1102

Chair: Kyozuka, Y, Kyushu Univ, Japan

Co-Chair: Wilhelmsson, D A, Stockholm Univ, Sweden

Analysis of Medium to Long Term Variation of Water Quality in Seto Inland Sea

Uno, K, Tsujimoto, G, Kakinoki, T, Kobe City College of Tech, Japan

Precipitation of Loads of Nutrients and Its Impact on Primary Production in the Osaka Bay

Nakatani, Y, Nishida, S, Irie, M, Osaka Univ, Japan

Diatoms in the Surface Sediments of the Amur River Estuary

Obrezkova, M S, V.I. Il'ichev Pacific Oceanological Inst, FEB Russian Academy of Sciemces (RAS), Russia

Relative Merits of Seawater Exchange System Including Pipeline with Multi-Outlets

Kim, H S, Jang, C H, Kim S T, Kookmin Univ; Song, M S, Kunhwa Co, Korea

Field Observations and Numerical Simulation of Currents and Water Quality in Harbor of Osaka Bay

Irie, M, Nishida, S, Nakatsuji, K, Osaka Univ, Japan

Sea Level Rise Based on Tide Gauge and Satellite Altimeter

Wu, L C, Hsu, T W, National Cheng Kung Univ, Taiwan, China

21. AUV, ROBOTICS & COMMUNICATION IV: AUV & Power (V.2)

Tuesday June 23 10:30 Room 1101

Chair: Nakamura, M, Kyushu Univ, Japan

Underwater Thruster Saturation Detection and Prevention Considering Battery Voltage Sag

Hanai, A M, Rosa, K H, Marine Autonomous Systems Engineering; Marani, G, Choi, S K, Univ of Hawaii, USA

Pump-Jet Thruster for AUV Docking with an Underwater Station

Sawa, T, Aoki, T, Yoshida, H, Hyakudome, T, Isibasi, S, JAMSTEC; Sutou, A, Tokyo Univ of Marine Science and Tech, Japan

Improvement of a High Energy Type Lithium-Ion Battery System for Unmanned Underwater Vehicle

Yoshida, H, Hyakudome, T, JAMSTEC; Fujiya, N, Konno, S, Oomiya, M, Ozawa, K, ENAX Inc, Taro, A, JAMSTEC, Japan

A Study on the Design Optimization of an AUV by Using CFD Analysis

Joung, T H, Sammut, K, He, F P, Flinders Univ, Australia; Lee, S K, Pusan National Univ, Korea

Evaluation of the Added Mass for a Spheroid-type UUV by VPMM Test

Lee, S K, Cheon, T H, Joung, T H, Jang, T S, Lee, J H, Pusan National Univ, Korea

A Practical Numerical Method to Forecast the Hydrodynamic Behavior of a Ducted Thruster in the Flow Field of a Tethered Underwater Robot

Wu, J M, Lai, H W, Zhu, L S, South China Univ of Tech, China

Hydrodynamic Analysis of a Tethered Underwater Robot System

Wu, J M, Zhu, L L, Zhu, L S, South China Univ of Tech, China

22. HYDRODYNAMICS V: CFD 5 & MetOcean (V. 3)

Tuesday June 23 14:00 Room 1008

Chair: Zang, J, Univ of Bath, UK

Numerical Study on Generation of Cnoidal Waves and Induced

Viscous Flow over a Wavy Bed

Li, T C, Tang, C J, National Cheng Kung Univ, Taiwan, China

Evolution of Stokes Wave Side-Band Instability along a Super Tank: Experiments and Saturation Modification of Tulin & Landrini NLS Model

Yang, R Y, Hwung, H H, Shugan, I V, Chiang, W S, National Cheng Kung Univ, Taiwan, China

Application of Wavelet Transfer to Spectral Analysis of Surface Wave Method

Ni, S H, Yang, Y Z, National Cheng Kung Univ, Taiwan, China

Simulation of Internal Waves in Two-Layer Fluids by a Two-Domain Boundary Element Method

Koo, W C, Univ of Ulsan, Korea

Structure of the Head of Gravity Currents in a Long Channel

Baba, N, Koue, J I, Osaka Prefecture Univ, Japan

An Implicit Three-Dimensional Hydrodynamic Model for Free-Surface Flows

Wang, K, Jin, S, Liu, G, Dalian Univ of Tech, China

Analysis of Marine Accident and Freak Wave Prediction with an Operational Wave Model

In, K, Waseda, T, Kiyomatsu, K, Univ of Tokyo; Tamura, H, JAMSTEC, Japan

23. HPM IV: Adv Materials & Structures 2 (V. 4)

Tuesday June 23 14:00 Room 1004

Chair: Jin, HW, ExxonMobil Research & Engineering Co, USA

Extension of Service Life and Considerations on Corrosion Problems of Offshore Wind Energy

Herion, S, Univ of Karlsruhe; Faber, T, Germanischer Lloyd Industrial Services; Hrabowski, J, Univ of Karlsruhe, Germany

Hydrogen Diffusion and Trapping Behavior of Linepipe Steel under Dead Weight Test Condition

Park, G T, POSTECH; Jung, H G, Hoh, S U, POSCO; Kim, K Y, POSTECH, Korea

Progress and Challenges in the Development of Smart Coatings for Steel Structures

Wheat, H G, Liu, G, Univ of Texas, USA

Compressive Behavior of Aged API-X100 Linepipe

Cho, W Y, RIST; Seo, D H, Yoo, J Y, Kang, K B, POSCO, Korea

Bending Deformation of X80 Cold Bend Pipe

Horikawa, H, Suzuki, N, JFE R&D Corp, Japan

Circular Cylindrical Tubes under Extension, Torsion, Bending, Pressure and Temperature Change

Tarn, J Q, Chang, H H, National Cheng Kung Univ, Taiwan, China

The Cavitational Erosion Resistance of the B2-Type Intermetallic FeAl Alloys

Jasinowski, R, Wojciech, P, Maritime Univ of Szczecin; Dariusz, Z, Military Univ of Tech, Poland

Transformation-Induced Microscopic Residual Stress in Ferrite-Martensite Lamellar Steels and Its Influence on Fatigue

Crack Propagation Paths

Mikami, Y, Inao, A, Osaka Univ; Nakashima K Shimanuki, Nippon Steel; Mochizuki, M, Toyoda, M, Osaka Univ, Japan

Damage Detecting and Safety Appraisal of Steel Box Girder Viaduct on Service

Wang, Y Q, Yao, N, Zhang, T S, Shi, Y J, Tsinghua Univ, China

24. ENVIRONMENT V: Coastal Monitoring (V. 1)

Tuesday June 23 14:00 Room 1102

Chair: Sayed, M, National Research Council, Canada

Co-Chair: Sato, T, Univ of Tokyo, Japan

Application of Information Theory for Analyzing High-Frequency Environmental Monitoring Data from a Coastal Industrial Park

Liu, T K, Yu, J L, Hwung, H H, National Cheng-Kung Univ, Taiwan, China

Evaluation of Natural Remediation of the Tidal Mud in the Ariake Sea Due to the Tidal Effect and Temperature Effect

Moqsud, M A, Hayashi, S, Bushra, Q S, Suetsugu, D, Saga Univ, Japan

Vortex Formation and Waveform Inversion of an Internal Solitary Wave Propagating over a Shelf - Slope Topography

Cheng, M H, Hsu, J R C, National Sun Yat-Sen Univ, Taiwan, China

Distribution and Potential Impact of Metal Pollutants in the Coastal Environment: A Case Study with Special Reference to Coastal Aquaculture in Red River Delta of Viet Nam

Bhakta, J N, Koichi Univ, Japan; Son, L T, Hanoi Univ of Science, Vietnam; Munekage, Y, Koichi Univ, Japan

A Numerical Study on the Surface Discharge of Ocean Outfall in the Keelung City of Taiwan

Yang, W C, Taiwan Ocean Research Inst; Shiau, B S, National Taiwan Ocean Univ; Hsu, C M, Taiwan Ocean Research Inst, Taiwan, China

25. AUV, ROBOTICS & COMMUNICATION V: AUV & Robot (V.2)

Tuesday June 23 14:00 Room 1101

Chair: Yamaguchi, S, Kyushu Univ, Japan

Study on Active Structural Acoustic Control in the Independent Modal Space

Sun, C, Zhao, D, Dalian Univ of Tech, China

Underwater Vehicle Motion Parameter Estimation Experiment Based on Low Cost Camera and Inertial Measurement Unit

Li, Q, Zhang, Q, Wang, X H, Inst of Automation, CAS, China

Integral Variable Structure Control and Simulation for Near-Surface Movement of AUV

Yao, Z G, Qin, Y L, CNPC Research Inst of Engineering Tech; Zhang, L, Harbin Engineering Univ, China

Buckling Modes of an Underwater Diagnostic Pressure Vessel

Curry, R, Kahlen, F-J, Univ of Cape Town, South Africa

Development of Motion Control System for a Fish Type Robot

Yamaguchi, S, Sumoto, H, Terada, M, Kyushu Univ, Japan

26. HYDRODYNAMICS VI: CFD 6 & MetOcean (V. 3)

Tuesday June 23 16:20 Room 1008

Chair: Kawai, H, Port and Airport Research Inst, Japan

Numerical Simulation of Current under Waves, Tides, and Typhoon

Zhang, J, Liang, B C, Li, H, Ocean Univ of China, China

Application of the Statistics of Extreme Value Theory on Non-Linear Ocean Waves

Liu, J D, Fugro Seismic Imaging AS; Krogstad, H E, Norwegian Univ of Science and Tech, Norway

Further Modification Practical Method for Estimating Directional Wave Spectrum by HF Radar

Lukijanto, Hashimoto, N, Yamashiro, M, Kyushu Univ, Japan

Simulation and Analysis of Ocean Waves in the Northwest Pacific Ocean

Zhu, Z X, Zhou, K, Yang, Y, Shanghai Jiao Tong Univ, China

Estimation of Sea Conditions in a Long Return Period around Japan

Ishida, S, Kokubun, K, National Maritime Research Inst, Japan

Study Wave Regimes Southern Okhotsk Sea on Annual Results of Continuous Observations

Kuznetsov, K I, Chernov, A G, Kurkin, A A, Nizhny Novgorod State Technical Univ, Russia

Comparisons between the Wind Wave Results from WAVEWATCH III and the Observed Data

Liu, S, Sun, J, Guan, C L, Ocean Univ of China, China

Numerical Modelling of 3D Oblique Waves by L-Type Multiple Directional Wave Generator

Shih, R S, Tungnan Univ; Chou, C R, Weng, W K, National Taiwan Ocean Univ, Taiwan, China

27. GEOTECH IV: Consolidation & Embankment (V. 2)

Tuesday June 23 16:20 Room 1001

Chair: Tokida, K-I, Osaka Univ, Japan

Co-Chair: Shang, J Q, Univ of Western Ontario, Canada

A Stability Analysis for Embankment Retaining Wall of Soil Gabions

Tseng, K H, Fu, J J, National Kaohsiung First Univ of Science and Tech, Taiwan, China

Construction of an Embankment with Dredged Sludge: Back Analysis

Levacher, D R, Duah, Z, Universite de Caen; Pioline, M, CETE; Tison, E, DDE, France

Geotechnical Behaviors of Dredged Clay Surface Improved by RM Method

Ahn, D W, Hanyang Univ; Kang, M S, Samsung Engineering & Construction; Kim J Y, Kim, S S, Hanyang Univ, Korea

Failure Mode in Embankments Supported by Piles with Geosysnthetic

Lee, J H, GS Engineering & Construction; Hong, W P, Chung-Ang Univ; Lee, K W, Korea Inst of Construction Tech; Yun, J M, Ansan College of Tech; Yea, G G, Sambu Construction; You, S K, Myong-Ji College, Korea

Settling Process and Shock Wave of Cohesive Sediment

Hsu, W Y, National Cheng Kung Univ; Liu, C M, Chienkuo Tech Univ; Hwung, H H, Yang, R Y, National Cheng Kung Univ, Taiwan, China

28. ARCTIC, ANTARCTIC & ICE I (V. 1)

Tuesday June 23 16:20 Room 1102

Chair: Fissel, D B, ASL Environmental Sciences, Canada

Co-Chair: Buzin, I V, SI Arctic and Antarctic Research Inst, Russia

Characteristics of Icebergs in Their Origin Sites in Russian Arctic:

Results of Airborne and Direct Studies 2007-2008 IPY

Kubyshkin, N V, Andreev, O M, Borodulin, V V, Arctic and Antarctic Research Inst, Glazovsky, A F, Inst of Geography, RAS; Gudoshnikov, Y P, Zubakin, G K, Arctic and Antarctic Research Inst, Macheret, Y Y, Inst of Geography, RAS; Skutin, A A, Arctic and Antarctic Research Inst, Russia

Investigation of Arctic Sea Route Open Days using AMSR-E Satellite Microwave Data

Shibata, H, Tateyama, K, Enomoto, H, Kitami Inst of Tech, Japan

Iceberg Freshwater Sustainable Transportation

Spandonide, B, Univ of Tasmania, Australia

Temperature Properties of Snow on Sea Ice with Water Infiltration

Kojima, S, Toyo Engineering Works; Nakamura, K, National Inst of AIST; Naoki, K, Chiba Univ; Enomoto, H, Kitami Inst of Technology, Japan

An Experiment of EG/AD/S Model Ice Grown for Applying at the MOERI Ice Model Basin

Cho, S R, Lee, C J, MOERI/KORDI, Kim, J H, Jeong, S Y, Choi, K S, Korea Maritime Univ, Korea

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29. GEOTECH V: Soil Properties 1 (V. 2)

Wednesday June 24 08:00 Room 1001

Chair: Bransby, F Bransby, F, Univ of Dundee, UK,

Co-Chair: Nabeshima, Y, Akashi National College of Tech., Japan

Compaction Control of Soils by Resistivity and Correction Procedure for Its Reference Value to Water Content Change

Sawazaki, M, Fukui Univ of Tech; Ueno, N, Dai Nippon Construction; Matsui, T, Fukui Univ of Tech, Japan

The Failure Criterion of K_0-Consolidated Saturated Clay under Combined Static and Cyclic Stresses

Wang, J H, Tianjin Univ; Zhou, Y, China Oilfield Services Limited, China

The Mechanical properties of High Strength Soil Material Made from Reservoir Mud

Chen, J W, Chang, C F, National Cheng Kung Univ, Taiwan, China

Shear Behavior of Normally and Overconsolidated Nakdong River Clayey Silt

Tint, K S, Kim, Y S, Kyungpook National Univ, Korea

Keynote Presentation II (V. 4)

Wednesday June 24 08:00 Room 1002

The Second (2008) ISOPE Strain-based Design Symposium – A Review

Lillig, D B, Newbury, B D, Alstadt, S A, ExxonMobil Development, USA

Introduction by Wang, Y-Y, Center for Reliable Energy Systems, USA

30. COASTAL ENGINEERING V: Breakwaters (V. 3)

Wednesday June 24 08:00 Room 1006

Chair: Deguchi, I, Osaka Univ, Japan

Hydraulic Experiment for Development of a Cylindrical Slit Type Breakwater

Lee, J W, Nam, K D, Korea Maritime Univ, Korea

Examination of Wave Pressures on Breakwater over Steep Beach

Tsai, C P, Lin, Y J, Hung, C W, National Chung Hsing Univ, Taiwan, China

Prediction of Wave Run-up on Step Dike

Juang, J T, Chienkuo Tech Univ; Lin, C F, You, J Y, Fen-Chia Univ, Taiwan, China

Field Measurements of the Behavior of Caisson Type Breakwater with Suction Piles

Jang, I, Park, W S, Kwon, O S, Jeong, W M, Korea Ocean Research and Development Inst, Korea

Permeability Parameter of Perforated Wall with Vertical Slits

Suh, K D, Kim, Y W, Ji, C H, Seoul National Univ, Korea

Resonant Fluid Motions in Joint Gap of Caisson-Type Breakwater under Random Wave Attack

Hiroyuki, H, Ishikawa Prefectural Office; Saitoh, T, Ishida, H, Kanazawa Univ, Japan

Case History: Using Prefabricated Caissons to Construct Guide Dikes on Soft Clay

Yan, S W, Feng, X W, Tianjin Univ, China; Chu, J, Nanyang Tech Univ, Singapore; Fan, Q J, Yangtze Estuary Waterway Construction, China

31. PIPELINES & RISERS V: Riser & Dynamics (V. 2)

Wednesday June 24 08:00 Room 1007

Chair: Lim, F, 2H Offshore Engineering, UK

Hydrodynamic Aspects of Pipeline Overtrawling

Teigen, P, Ilstad, H, Levold, E, StatoilHydro, Norway

Design Analysis of a Weight Added Wave Configuration of a Flexible Riser in Shallow Water

Tan, Z, Zhang, J, Ma, F, Hou, Y, Wellstream International, USA

Influence of the Type of Geometrical Imperfection on the Response of Steel Pipes Subject to Pure Bending

Arjomandi, K, Taheri, F, Dalhousie Univ, Canada

Simulation of Active Heave Compensation System Based on Dynamic Vibration Absorber for Deep Sea Mining System

Li, L J, Liu, S J, Central South Univ, China

32. OFFSHORE SYSTEM I: LNG, FLNG & Offloading (V. 1)

Wednesday June 24 08:00 Room 1005

Chair: Duggal, A, SOFEC, USA

Wave Loading on a Stationary LNG Barge, Potential Flow Methods versus CFD

Teigen, P, StatoilHydro; Hansen, E, Complex Flow Design, Norway

Effect of Heading Control on LNG Offloading

Voogt, A J, MARIN USA, USA

FPSO with Gas to Liquid (GTL) Process Capability

Kawase, M, Ide, S, MODEC, Japan

Tandem Offloading from an FLNG in Harsh Environments

Heyl, C, Liu, A, Duggal, A, SOFEC, USA

Numerical and Experimental Investigation of Wave Forces and Wave Effects for Two Vessels in Side-By-Side Configuration

Teigen, P, StatoilHydro, Norway; Niedzwecki, J M, Texas A&M Univ, USA

33. ARCTIC, ANTARCTIC & ICE II (V. 1)

Wednesday June 24 08:00 Room 1102

Chair: Prinsenberg, S J, Bedford Inst of Oceanography, Canada

Numerical Simulations of First Year Ice Ridges Interaction with Wide Structures

Sayed, M, Timco, G, National Research Council, Canada

Dynamic Response of an Ice-Covered Fluid to an Impulse Submerged Point Source

Kozin, V M, Pogorelova, A V, Inst of Machining and Metallurgy, FEB RAS, Russia

Ice-Induced Vibrations of Gravity Based Platforms

Willemse, C A, Haverkamp, B, Delft Univ of Tech; Efthymiou, M, Kuiper, G, Shell International, The Netherlands

Estimation of Limit Ice Loads on Engineering Offshore Structures in the Sea of Okhotsk

Bekker, A T, Sabodash, O A, Shubin, O A, Far-Eastern National Tech Univ, Russia

Ice Model Testing of Artificial Islands Protected by Rock Berms

Li, G, BP; Braun, K, Hudson, B, PND Engineers, USA

A Review on Ice Resistance Prediction Formulas for Icebreaking Vessels

Choi, K S, Jeong, S Y, Korea Maritime Univ, Korea

34. OCEAN & WIND ENERGY I: Biomass & Energy (V. 1)

Wednesday June 24 08:00 Room 1101, 11F

Chair: Ikegami, Y, Saga Univ, Japan

A Feasibility Study of Marine Biomass Utilization System in Osaka Bay [Oral Presentation]

Otsuka, K, Yamakita, M, Osaka Prefecture Univ, Japan

Conversion and Utilization of Salinity Gradient Energy

Knyazhev, V V, Inst of Marine Technology Problems, FEB RAS, Russia

Effect of Operating Condition on the OTEC System Using Ammonia/Water Mixture as Working Fluid

Ikegami, Y, Asou, H, Inadomi, J, Goto, H, Saga Univ, Japan

Treatment of Geothermal Water from Geothermal Plant Using Hydrotalcite for Removal of Harmful Anions

Wajima, T, Akita Univ; Yasuyuki, I, Saga Univ; Suagawara, K, Akita Univ, Japan

New Opportunities in Construction of Local Energy Systems (LOES) in the North of Russia [Oral Presentation]

Bekker, A T, Solonitsyn, Far-Eastern National Tech Univ, Russia

35. COASTAL ENGINEERING VI: Floating Breakwaters (V. 3)

Wednesday June 24 10:30 Room 1006

Chair: Angelides, D C, Aristotle Univ of Thessaloniki, Greece

Co-Chair: Yauchi, E, Chiba Inst of Technology, Japan

Three-Dimensional Formulation of Multiple Pile-Restrained Floating Breakwaters Connected by Hinges

Diamantoulaki, I, Angelides, D C, Aristotle Univ of Thessaloniki, Greece

Influence of Connectors' Stiffness on Effectiveness of Floating Breakwaters

Michailides, C, Loukogeorgaki, E, Angelides, D C, Aristotle Univ of Thessaloniki, Greece

Dynamic Response of Bridge Tower by Wave Loads

Liu, G, Chen, S Y, Liu, T C, Wu, H B, Li, Y, China Highway Planning and Design Inst Consultants, China

Effect of Ship-Tugboat Hydrodynamic Interaction on Braking Force of Tugboats

Yang, L, Hong, B, Dalian Maritime Univ, China; Inoue, K, Sadakane, H, Kobe Univ, Japan

Numerical Simulation of Ship Motions Moored to Quay Walls in Long-Period Waves and Proposal of Allowable Wave Heights for Cargo Handling in a Port

Shiraishi, S, Hokkaido Inst of Tech, Japan

Development of a Reduction System for Low-Frequency Ship Motions and Its Field Experiments by Using a Large Ship

Yoneyama, H, Port and Airport Research Inst; Asakura, K, Tohoku Regional Bureau, Ministry of Land, Infrastructure, Transport and Tourism; Negi, T, Okinawa General Bureau Cabinet Office; Otake, Y, M.O. Marine Consulting, Japan

Motion Suppression of the Floating Pontoon with Side Porous Keels

Kee, S T, Seoul National Univ of Tech; Yoon, J S, Injie Univ, Korea

Fundamental Model Experiments on Response Characteristics of a Moored Ship and Mooring Facilities by Tsunami Flow

Ogaki, K, Toa Corp; Yoneyama, H, Port and Airport Research Inst; Tsuda, M, Toa Corp; Hiraishi, T, Port and Airport Research Inst; Kurihara, A, Toa Corp, Japan

36. PIPELINES & RISERS VI: Pipe-Soil Interactions 1 (V. 2)

Wednesday June 24 10:30 Room 1007

Chair: Moshagen, H, BHM Engineering Services, Norway

Displacement and Inner Force Analysis of Span Pipeline Based on the Interaction between Pipe and Soil

Cao, X F, Qin, Y L, CNPC Research Inst of Engineering Tech, China

Effect of the Liquefaction of Buried Pipe on Structure Safety during Earthquake

Hsiao, D H, Lin, M D, National Kaohsiung Univ of Applied Science, Taiwan, China

Pile Foundation Design in Deepwater

Zhang, H, Lim, F, Jewell, G, 2H Offshore Engineering, UK

Pipe Strain and Soil Pressure Development in Frozen Lightweight Backfill

Christ, M, Kim, Y C, Korea Inst of Construction Tech; Park, J B, Seoul National Univ, Korea

Pipe-Soil Interaction Analysis with a 3D Macroelement Model

Tian, Y H, Cassidy, M J, Univ of Western Australia, Australia

Vertical Bearing Capacity of a Partially-Embedded Pipe on Tresca Soil

Zhao, B, Gao, F P, Inst of Mechanics, CAS; Liu, J M, China National Petroleum Offshore Engineering; Wu, Y X, Inst of Mechanics, CAS, China

A Numerical Study of Ice-Soil-Pipeline Interaction

Abdalla, B A, Pike, K, Eltaher, A, Jukes, P, Duron, B, J P Kenny, USA

37. OFFSHORE SYSTEM II: Installation & Operations (V. 1)

Wednesday June 24 08:00 Room 1005

Chair: Capanoglu, C, I.D.E.A.S., USA

Co-Chair: Park, R S, Univ of Ulsan, Korea

Development of Artificial Seabed Technology and Conduct of Pre-Trial Well in South China Sea

Guo, Y F, Ji, S J, Tang, C Q, China Oilfield Services Ltd (COSL), China

Evaluating the Impact Load on the Offshore Platform during Topside Installation Using Float-Over Method

Jung, J J, Kim, Y H, Lee, W S, Shin, H S, Hyundai Heavy Industries, Korea

Development Mode and Structure Type for Shallow Water Oilfield

Zhang, A, Liu, J, China National Petroleum Offshore Engineering; Duan, M, China Univ of Petroleum, China

Construction Techniques for Deep Water Immersed Tunnel in Bosphorus Strait

Ito, K, Oda, Y, Honda, T, Koyama, F, Taisei Corp, Japan

A Study on the Helical Flow of Non-Newtonian Fluids in an Annulus

Hwang, Y K, Han, S M, Sungkyunkwan Univ; Kim Y J, Korea Inst of Geoscience and Mineral Resources; Woo, N S, Sungkyunkwan Univ, Korea

A Novel Oil-Water Separation System for Offshore Platforms

Wu, Y X, Wang, L Y, Xu, J Y, Zhong, X F, Inst of Mechanics, CAS, China

38. OCEAN & WIND ENERGY II: Waves 1 (V. 1)

Wednesday June 24 10:30 Room 1101, 11F

Chair: Hong, S W, Maritime and Ocean Engineering Res Inst (MOERI), Korea

Assessing and Improving the Edinburgh Curved Wave Tank

Pascal, R C R, Lucas, J, Ingram, D, Bryden, I G, Univ of Edinburgh, UK

CFD Analysis on the Performance and Internal Flow Characteristics of a Savonius Type Direct Drive Turbine for Wave Energy Converter

Choi, Y D, Cho, Y J, Lee, Y H, Korea Maritime Univ, Korea

Investigation on Integrated System of Chamber and Turbine for OWC Wave Energy Convertor

Liu, Z, Ocean Univ of China, China; Hyun, B S, Korea Maritime Univ; Hong, K Y, Lee, Y Y, MOERI/KORDI, Korea

Development of a New Radial Impulse Turbine Design for OWC

Pereiras, B, Castro, F, Rodriguez, M A, Univ of Valladolid, Spain

Tip Clearance Effect on the Flow Pattern of a Radial Impulse Turbine for Wave Energy Conversion

Pereiras, B, Castro, F, Rodriguez, M A, Univ of Valladolid, Spain

Numerical Simulation for Evaluation of Primary Energy Conversion of Floating OWC-type Wave Energy Converter

Imai, Y, Toyota, K, Nagata, S, Setoguchi, T, Oda, J, Matsunaga, N, Manago, Y, Shimozono, T, Saga Univ, Japan

39. HYDRODYNAMICS VIII: CFD 8 -Wave Forces (V. 3)

Wednesday June 24 14:00 Room 1008

Chair: Choi, H S, Seoul National Univ, Korea

Co-Chair: Ng, C O, The Univ of Hong Kong, Hong Kong, China

Wave Pressure Distributions of an Elastic Floating Structure Model Subjected to Harmonic Waves

Kawakami, Y, Endo, R, Polytechnic Univ, Japan

Numerical Analysis of the Forces Exerted on a Truncated Cylinder by Ship Waves

Sun, L, Dong, G H, Zong, Z, Dalian Univ of Tech, China

Jack-up Leg Hydrodynamic Load Prediction - a Comparative Study of Industry Practice with CFD and Model Test Results

Lee, S K, American Bureau of Shipping, USA; Yan, D, American Bureau of Shipping, Singapore; Zhang, B, Kang, C W, Inst of High Performance Computing, Singapore

The Reciprocal Form of Mean Wave Drift Force and Yaw Moment

Tsubogo, T, Osaka Prefecture Univ, Japan

Validation of Nonlinear Wave Load Precition Method Using Segmented Model Tests for Large Container Carrier

Kim, S G, American Bureau of Shipping, USA; Hong, S Y, KORDI, Korea; Yu, H C, American Bureau of Shipping, USA

Experimental Investigation of Wind Forces Acting on Container Ships

Fujiwara, T Tsukada, Y, Kitamura, F, Sawada, H, National Maritime Research Inst, Japan

A Study on Wind Pressure Characteristics of Ships with Large Superstructures

Momoki, T, Onishi, S, Katayama, T, Ikeda, Y, Osaka Prefecture Univ, Japan

40. OFFSHORE SYSTEM III: Jacket & Jackup (V. 1)

Wednesday June 24 14:00 Room 1002

Chair: Boswell, L, The City Univ, London, UK

Co-Chair: Yang, X, CNOOC-COOEC, China

Some Shallow Water Jacket Platforms Need Doing Detailed Fatigue Analysis

Liu, J M China National Petroleum Offshore Engineering Co, China

System Identification of Offshore Jack-up Platform

Wang, X M, Koh, C G, National Univ of Singapore, Singapore

Modal Parameters Identification of Offshore Platform Structures Using HHT Method

Liu, J F, COOEC; Li, H J, Ocean Univ of China; Wang, Y, Hu, X T, COOEC, China

Behavior, Design, and Observations of Wood Piles Used in Coastal Residential Construction

Wheat, D L, Univ of Texas at Austin, USA

Substructural Identification Method for Fixity of Jack-up Spudcan Foundations

Thanh, T N, Wang, X M, Koh, C G, National Univ of Singapore, Singapore

41. COASTAL ENGINEERING VII: Rubble- Breakwater (V. 3)

Wednesday June 24 14:00 Room 1006

Chair: Mizutani, N, Nagoya Univ, Japan

3-D Stability of Rubble Mound Breakwaters Relative to Shallow Water Characteristics

Kim, H J, Pukyong National Univ; Kang, Y K, Samsung Corp; Ryu, C R, Pukyong National Univ, Korea

Stability Change of Wave-Dissipating Blocks due to the Repair with Larger Blocks

Arimitsu, T, Kansai Electric Power, Japan

Pressure Exerted by a Solitary Wave on the Rubble Mound Foundation of an Armoured Caisson Breakwater

Esteban, M, United Nations Univ, Japan; Nguyen Danh, T, Ho Chi Minh City Univ of Tech, Vietnam; Takagi, H, Shibayama, T, Yokohama National Univ, Japan

A Rational Design of Armor Block and Foot-Protection Block Covering Rubble Mound of Composite Breakwaters

Kubota, S, Fudo Tetra Corp; Shimosako, K, Port and Airport Research Inst; Hamaguchi, M, Matsumoto, A, Hanzawa, M, Yamamoto, M, Fudo Tetra Corp, Japan

Estimation of Repair Cost for Caisson Breakwaters Covered with Wave-Dissipating Blocks

Araki, S, Deguchi, I, Osaka Univ, Japan

Plenary Presentation V (V. 2)

Wednesday June 24 14:00 Room 1007, 10F

The Hughes Glomar Explorer and a 5,100-m-long Heavy-Lift Pipe: Coupled Ship and Pipe Motions Measured in the North Pacific Ocean

Chung, J S, ISOPE, USA

Introduction by Knapp, R H, Univ of Hawaii, USA

42. OCEAN & WIND ENERGY III: Waves 2 (V. 1)

Wednesday June 24 14:00 Room 1101, 11F

Chair: Nagata, S, Saga Univ, Japan

Effect of Liquid Metal Characteristics on Performance of LMMHD Wave Energy Conversion System

Zhao, L Z, Peng, Y, Sha, C, Li, R, Xu, Y, Liu, B L, Li, J, Inst of Electrical Eng, Chinese Academy of Sciences, China

Performance of a Direct Drive Turbine for Wave Energy Converter

Lee, Y H, Choi, Y D, Kim, C G, Korea Maritime Univ, Hwang, Y H, Shinhan Precision, Korea

Force Reacting Principle Applied to a Heave Point Absorber Wave Energy Converter

Soulard, T, Alves, M, Sarmento, A, Wave Energy Centre, Portugal

Development of the New, Wave Power Generation System

Kanki, H, Kobe Univ; Arii, S, Tottori Univ; Furusawa, T, Alpha Technical Research, Japan

A Fundamental Study on Energy Absorption Performance of OWC Type Absorbers of Wave Energy with an Artificial Harbor

Ikoma, T, Nihon Univ; Osawa, H, JAMSTEC; Tomizawa, Y, Nihon Univ; Ito, K, JAMSTEC; Masuda, K, Nihon Univ, Japan

Experimental Study on Wave Energy Absorption Efficiency of OWC Chamber Using Orifice for Turbine Effect

Hong, K Y, Shin, S H, Ryu, H J, Hong, D C, Kim, S H, MOERI/KORDI, Korea

43. COASTAL ENGINEERING VIII: Submerged Structures (V. 3)

Wednesday June 24 16:20 Room 1006

Chair: Kee, S T, Seoul National Univ of Tech, Korea

Hydrodynamic Characteristics around the Steel Artificial Reef at a Fishing Ground

Tawaret, A, Ryu, C R, Pukyong National Univ, Korea

Wave Transformations over a Submerged Obstacle

Hsu, C M, National Applied Research Labs; Lin, M C, National Taiwan Univ; Yang, W C, National Applied Research Labs,

Taiwan, China

Wave Scattering by a Submerged Porous Plate Wave Absorber

Yueh, C-Y, Chuang, S H, National Taiwan Ocean Univ, Taiwan, China

Effectiveness of Seafloor Mounted Structures for Upwelling in Deep Seas

Kida, H, Nippon Steel Engineering; Inouchi, K, Nakamura, T, Ehime Univ; Deguchi, I, Osaka Univ, Japan

Reflection of Directional Random Waves Propagating over Various Shapes of Trench

Cho, Y S, Hanyang Univ; Jung, T W, Korea Inst of Construction and Tech; Lee J W, Hanyang Univ; Lee, J I, Korea Inst of Construction and Tech, Korea

A Numerical Study of Solitary Waves Propagating over Permeable and Impermeable Submerged Plates

Hsiao, S C, Wu, Y T, Lin, T C, National Cheng Kung Univ, Taiwan, China

RANS Modeling on Bragg Scattering under Cnoidal Waves over Artificial Bars: Permeable and Impermeable Effects

Hsiao, S C, Yang, T Y, Lin, T C, National Cheng Kung Univ, Taiwan, China

A Study on Change of Wave and Current Characteristics according to Constructing the Submerged Breakwater on Busan Songdo Beach, Korea

Yoon, J S, Kim, M G, Inje Univ; Kee, S T, Seoul National Univ of Tech; Hur, D S, Gyeongsang National Univ, Korea

Bragg Scattering of Waves Propagating over a Series of Poro-Elastic Submerged Breakwaters

Lan, Y J, Hsu, T W, Lai, J W, Chang, C C, Ting, C H, National Cheng Kung Univ, Taiwan, China

44. PIPELINES & RISERS VII: Pipe-Soil Interactions 2 (V. 2)

Wednesday June 24 16:20 Room 1007

Chair: Kan, W.C., ExxonMobil Development Co, USA

The Use of Advanced Finite Element Analysis Tools for the Design and Simulation of LNG and LPG Subsea Pipelines and Risers

Jukes, P, Sun, J, Chen, J, Brown, T S, J P Kenny, USA

Uplift Resistance of Buried Pipelines in Blocky Clay Backfill

Wang, J K, Haight S H, Univ of Cambridge; Thusyanthan, I, KW Ltd, UK

Soil Characterization of Deep Sea West African Clay: Is Biology a Source of Mechanical Strength?

Kuo, M Y, Bolton, M D, Univ of Cambridge, UK

Evaluation of Lateral Resistance for Buried Conditions around Pipe with Horizontal Loading

Kashiwagi, A, Kawabata, T, Kobe Univ; Mohri, Y, National Inst for Rural Engineering; Okuno, S, Kobe Univ; Shimura, K, Hokuriku Agricultural Administration Office; Uchida, K, Kobe Univ, Japan

Sweeping Simulation of Unburied Offshore Pipeline during Cyclic Lateral Movement

Takatani, T, Maizuru National College of Tech, Japan

Use of Thermal Imaging in Study of Heat Loss from Buried Pipelines

Thusyanthan, I, KW Ltd, UK

45. OCEAN & WIND ENERGY IV: Waves 3 (V. 1)

Wednesday June 24 16:20 Room 1101, 11F

Chair: Aoki, T, JAMSTEC, Japan

Numerical Investigation of a Surging Point-Absorber Wave Energy Converter

Bhinder, M A, Mingham, C G, Causon, D M, Manchester Metropolitan Univ; Rahmati, M T, Aggidis, G A, Chaplin, R V, Lancaster Univ, UK

On the Resonance Characteristics of the Float Type Wave Power Generation Device

Taneura, K, Hadano, K, Koirala, P, Yamaguchi Univ; Nakano, K, Univ of Tokyo, Japan

Dynamics Model of the Float-Counterweight Wave Energy Converter Considering Vertical and Horizontal Motions of the Float

Kesayoshi, H, Koirala, P, Yamaguchi Univ; Nakano, K, Univ of Tokyo; Taneura, K, Yamaguchi Univ, Japan

The Analysis of the Negative Drift Force Acting on a Floating OWC "Backward Bent Duct Buoy"

Nagata, S, Toyota, K, Imai, Y, Setoguchi, T, Saga Univ, Japan

Geometrical Optimization for Improved Power Capture of Multi-Level Overtopping Based Wave Energy Converters

Largheritini, L, Aalborg Univ, Denmark; Victor, L, Ghent Univ, Belgium; Kofoed, J P, Aalborg Univ, Denmark; Troch, P, Ghent Univ, Belgium

2009.06.25

46. OFFSHORE SYSTEM V: TLP/SPAR/FPSO 2 (V. 1)

Thursday June 25 08:00 Room 1002

Chair: Mathai, T, The Glosten Assoc., USA

Co-Chair: Surkein, M B, ExxonMobil Development, USA

Ice-Resistant FPSO Weather-Vaning Capability Assessment

Chernetsov, V A, Karlinsky, S L, Shushkova, O A, RUBIN Central Design Bureau for Marine Engineering, Russia

Direct Time Domain Downtime Assessment for LNG Operations Using Computer Clusters

de Wilde, J J, van Dijk, A, van den Berg, A J, Dekker, J, MARIN, The Netherlands

Application of an Integrated FEED Basic Process Engineering Solution to Generic LNG FPSO Topsides

Hwang, J Y, Ahn, Y J, Min, J H, Jeong, H, Lee G N, Kim, M Y, Kim, H C, Samsung Heavy Industries; Roh, M I, Univ of Ulsan; Lee, K Y, Seoul National Univ, Korea

Establishment of Offshore Process FEED (Front End Engineering Design) Method for Oil-Based FPSO Topsides Systems

Hwang, J, Lee, K Y, Cha, J W, Seoul National Univ; Roh, M I, Univ of Ulsan; Cha, J W, Ham, S H, Kim, B, Seoul National Univ, Korea

Detailed Design and Construction of the Hull of an FPSO (Floating, Production Storage and Off-Loading Unit)

Hwang, J K, Hyundai Samho Heavy Industries; Bang, G J, Hyundai Heavy Industries; Roh, M I, Ulsan Univ; Lee, K Y, Seoul National Univ, Korea

47. COASTAL ENGINEERING IX: Estuary & Waves (V. 3)

Thursday June 25 08:00 Room 1006

Chair: Hong, K Y, Maritime and Ocean Eng Res Inst (MOERI), Korea

The Study of Seawater Intrusion in Pearl River Estuary Area by a River Network-Estuary-Coastal Ocean Coupled Numerical Simulation System

Zou, H, Pearl River Hydraulic Research Inst; Li, H J, Ocean Univ of China, China

Effect of Intensity and pH of Rain on the Dissolution of Limestone

Adham, A K M, Kobayashi, A, Kyoto Univ, Japan

Simulating Morphological Changes at Yangtze Estuary

Zhou, X Y, Zanke, U, Darmstadt Univ of Tech, Germany; Yan, Y X Hohai Univ, China

Hydrodynamic Condition Changes of Large-Scale Reclamation in Xuanmen Bay, China

Yao, J, Tan, Y, Tao, J F, Hohai Univ, China

A Study of the Characteristics of the Wave Field near Taipei Harbour

Yim, J Z, Chou, C R, Weng, W K, National Taiwan Ocean Univ, Taiwan, China

Study of Harbor Resonance in Future Expansion Deployment of Taipei Harbor

Lee, J F, National Cheng Kung Univ; Chiu, Y F, Ho, L S, Ministry of Transportation and Communications; Kao, J H, National Cheng Kung Univ, Taiwan, China

Monitoring of the Post-construction Coastal Structure Project in Namae Beach, South Korea

Widayati, A Y W, Kim, K H, Kwandong Univ, Korea

Reduction of Wave Penetration into Harbors by V-Shaped Approach Channel

Yuhi, M, Kanazawa Univ; Kanemaki, F, Fuki Prefecture; Kunita, O, Oversea Coastal Area Development Inst of Japan; Ishida, H, Kanazawa Univ, Japan

Numerical Modeling of Oyster Larval Transport at Yunlin Coastal Area, Taiwan

Liou, J Y, Hsu, H C, Chang, Y, Huang, H Y, National Cheng Kung Univ, Taiwan, China

48. PIPELINES & RISERS VIII: Pipeline 1 (V. 2)

Thursday June 25 08:00 Room 1007

Chair: Wu, M, Acergy Group, USA

Geometrically Adjusted Residual Life of Corroded Pipeline under Cyclic Loading

Yukhymets, P, E. O. Paton Electric Welding Inst, Ukraine

Burst Tests on Pipeline Containing Corrosion in the Seam Weld

Benjamin, A C, Petrobras, Brazil

Ultimate Bending Capacity of Steel Pipes Considering Strain Hardening Effect

Li, X, Chen, Y, Zhu, T, Zhou, J, Dalian Univ of Tech, China

Experimental Investigation of Fatigue Strength for Subsea Pipelines Subjected to Combined Stresses

Xiao, Z G, Zhao, X L, Monash Univ, Australia

Dynamic Characteristics of Pipes with a Straight Front Crack

Zhou, J, Feng, X, H, J S, Zhu, T, Dalian Univ of Tech, China

Bending Capacity and Seismic Integrity of X65 ERW Line Pipe

Tajika, H, Suzuki, N, Horikawa, H, JFE R&D Corp, Japan

Fatigue Performances of Machined Pipe Outer Surface

Darcis, P P, Marines-Garcia, I, Tenaris Tamsa, Mexico; Di Vito, L F, Centro Sviluppo Materiali, Italy; Marques, E C, Dell'Erba, D, Tenaris, Tamsa, Mexico; Tintori, F, Armengol, M, Tenaris Dalmine, Italy; Quintanilla, H, Tenaris Tamsa, Mexico

49. OCEAN & WIND ENERGY V: Tidal (V. 1)

Thursday June 25 08:00 Room 1101, 11F

Chair: Jo, C H, Inha Univ, Korea

Tidal Power Engineering of Russia in the Arctic

Usachev, I N, Shpolyanskiy, Y B, Istorik, B L, Tidal Power Center, JSC, Russia

Multi-Arrayed Tidal Current Power Interaction Study

Jo, C H, Inha Univ; Park, R S, Univ of Ulsan; Hee, L K, Young, Y J, Inha Univ, Korea

Measurement of Turbulence of Tidal Current and its Effect on the Performance of a Tidal Current Power Generator

Kyozuka, Y, Duan, D, Li, Z, Kyushu Univ, Japan

Reversible Counter-Rotating Type Hydroelectric Unit for Tidal Power Station

Kasai, T, Nakamura, Y, Toshiaki, K, Kyushu Inst of Tech; Oba, S, DMW Corp, Japan

Conceptual Design of 100kW Energy Integrated Type Bi-Directional Tidal Current Turbine

Kim, K P, Choi, Y D, Lee, Y H, Korea Maritime Univ, Korea

Ocean Energy Converter Certification [Oral Presentation]

Argyriadis, K, Germanischer Lloyd Industrial Services, Germany

50. GEOTECH X: Modeling & Simulation (V. 2)

Thursday June 25 10:30 Room 1001

Chair: Chen, J W, National Cheng Kung Univ, Taiwan, China

Microscale Numerical Simulation for Estimating Permeability of Gas-Water and Solid-Water Phases in Sand Sediment

Sato, T, Univ of Tokyo; Sugita, T, Modec Inc, Fiyono, F, National Inst of AIST, Japan

Effect of Geometric Non-Linearity on the Deformation Behavior of Linear Elastic Ground

Shuku, T, Ohmoto Corp, Japan

A Modified ALPHA Model Based on Subloading Surface Theory

Zhan, Y, Jiangsu Univ of Science and Tech, Yuan, F, Inst of Rock and Soil Mechanics, CAS, China

Optimizing Pile Group Design Using Real Genetic Algorithm

Huang, J H, National Central Univ, Taiwan, China

Numerical Analysis for the Bearing Capacity of Footings on Layered Clays

Yuan, F F, Wei, C F, Inst of Rock and Soil Mechanics, CAS; Zhan, Y G, Jiangsu Univ of Science and Tech; Luan, M T, Dalian Univ of Tech, China

Discrete Element Analysis for Group Piles Subjected to Vertical Loading

Shoda, D, Kawabata, T, Kobe Univ; Numata, A, Tobishima Corp; Uchida, K, Kobe Univ; Motoyama, H, Tobishima Corp, Japan

Development of FE-numerical Analysis Program for Suction Drain Method

Yoon, M S; Kim, S S, Hanyang Univ; Han, S J, Expert Group for Earth & Environment; Kim, K N, Korea Rural Community & Agriculture, Korea

A Kinematic Model for the Variation in Porosity in Dry Granular Flows

Fang, C, National Cheng Kung Univ, Taiwan, China

51. OFFSHORE SYSTEM VI: TLP/SPAR/FPSO 3 (V. 1)

Thursday June 25 10:30 Room 1002

Chair: Teigen, P, StatoilHydro, Norway

Co-Chair: Soemantri, S, Bandung Inst of Tech, Indonesia

Corrosion Protection of Deep Water Permanently Moored Floating Production Systems Using Cathodic Protection

Surkein, M B, LaFontaine, J, Tanner, R E, ExxonMobil Development, USA

Low Cycle Fatigue Assessment of Side Shell Details of an FPSO

Rahi, H O, Incecik, A, Barltrop, N, Univ of Glasgow and Strathclyde, UK

Effect of Hydrodynamic Interaction on the Dynamic Behavior of Two Ships in Tandem

Souza Junior, J R, Morishita, H M, Ragazzo, C G, Univ of Sao Paulo, Brazil

An Experimental and Numerical Study on the Motion Characteristics of Side-By-Side Moored Two Vessels

Hong, Y P, Choi, Y H, Kim S E, Samsung Heavy Industries, Korea

Course Weather-Vaning FPSO Mathieu Instability Consideration

Chernetsov, V A, Karlinsky, S L, RUBIN Central Design Bureau for Marine Engineering, Russia

52. COASTAL ENGINEERING X: Tsunami & Long Waves (V. 3)

Thursday June 25 10:30 Room 1006

Chair: Hwung, H.H, National Cheng-Kung Univ, Taiwan, China

Co-Chair: Vicinanza, D, Second Univ of Naples, Italy

Experimental Study on the Effect of Varying Pycnocline Thickness on Internal Solitary Wave Evolution

Chen, C Y, Yung-Ta Inst of Tech and Commerce, Taiwan, China

Preliminary Study on Statistical Characteristics of Wave and Surge over Taiwan Waters

Lee, B C, Huafan Univ, Jao, K C, Cheng, C W, Wu, L C, National Cheng Kung Univ, Taiwan, China

Impacts of Wind Stress on the Surface Tidal Current on the Northern Portuguese Shelf

Chen, C, Ocean Univ of China; Zuo, J C, Hohai Univ; Chen, M, Ocean Univ of China, China

Numerical Simulation of Tides and Tidal Currents in Jiangsu Offshore Areas, China

Tao, J F, Zhang, C K, Yao, J, Gong, Z, Hohai Univ, China

Numerical Simulation of Coastal Town Planning against Tsunami by DEM-Base Human Behavior Simulator

Gotoh, H, Harada, E, Ohniwa, K, Kyoto Univ, Japan

Field Survey on Harbor Facility Damage Due to Cyclone NARGIS in Myanmar

Hiraishi, T, Port and Airport Research Inst, Japan

The Characteristic Analysis of the Storm Surge in Fujian Coastal Area and Its Forecast

Tan, Y, Zhang, J L, Wang Y H, Hohai Univ, China

On the Study of Impulsive Waves Caused by Landslides

Li, T, Troch, P, De Rouck, J, Ghent Univ, Belgium

Tsunamis Generated by Subaerial Landslides along the Coast of a Conical Island: Three-Dimensional Experiments in a Large Tank

Di Risio, M, Univ of L'Aquila; Bellotti, G, Panizzo, A, Univ of Rome; Molfetta, M G, Polytechnic of Bari; Aristodemo, F, Univ of Calabria-DDS; Pratola, L, Polytechnic of Bari; De Girolamo, P, Univ of L'Aquila; Petrillo, A F, Polytechnic of Bari, Italy

53. PIPELINES & RISERS IX: Pipeline 2 (V. 2)

Thursday June 25 10:30 Room 1007

Chair: Duan, M, China Univ of Petroleum, China

Design of Rock Berm Cover for Offshore Pipeline LNG Project in Hong Kong

Gaudin, C, Univ of Western Australia, Australia; Landon, M M, Univ of Maine, USA; Pedersen, V, CLP Power Hong Kong, China; Kiat, C H, Lequin, W, Intecsea, Singapore

Dynamic Analysis and Crack Identification for Free Spanning Pipeline with a Fatigue Crack

Feng, X, Hu, J S, Zhu, T, Zhou, J, Dalian Univ of Tech, China

Free Span Dynamics versus Global Buckling of the High Pressure and High Temperature Pipeline

Sun, J, Jukes, P, Duan, G, J P Kenny, USA

HP/HT Pipeline Expansion Analyses and Comparison with Hot Pipe Survey

Brakstad, L, Halvorsen, V H, Reinertsen AS; Holden, O M, StatoilHydro, Norway

Integrated Structural Reliability-Finite Element Analysis of Lateral Buckling of Offshore Flowlines

Banneyake, R, Eltaher, A, Sun, J, Jukes, P, J P Kenny, USA

54. OCEAN & WIND ENERGY VI: Wind 1 (V. 1)

Thursday June 25 10:30 Room 1101, 11F

Chair: Murai, M, Yokohama National Univ, Japan

Co-Chair: Cheboxarov, V V, FEB Russian Academy of Sciences, Russia

Validation of a Finite Element Based Simulation Approach for Offshore Wind Turbines within IEA Wind Annex XXIII – Simulation Challenges and Results for a 5-MW Turbine on a Tripod Substructure

Vorpahl, F R, Huhn, H, Busmann, H-G, Fraunhofer Center for Wind Energy and Maritime Engineering (CWMT); Kleinhansi, S, Aero Dynamik Consult Ingenieurgesellschaft, Germany

A Study of Geometric Properties and Shape Factors for Wind Turbine Tower Design

Jang, J J, Chien, C W, National Taiwan Ocean Univ, Taiwan, China

Wave Response Experiment on SPAR-Type Floating Bodies for Offshore Wind Turbine

Utsunomiya, T, Nishida, E, Kyoto Univ; Sato, I, Toda Corporation, Japan

Dynamic Analysis of Offshore Wind Turbine under Extreme Wind and Wave Loading with Including the Fluid-Structure Interaction

Chen, X B, Chen, J Y, Li, J, Dalian Univ of Tech, China

An Experimental Study on the Roll Motion Reduction of the Floating Wind Turbine Platform with Submerged Horizontal Fins

Sunahara, S, Sekita, K, Tokai Univ, Japan

Application of an Abandoned Jacket for an Offshore Structure Base of Wind Turbine in Bohai Heavy Ice Conditions

Wang, Y, Dalian Univ; Duan, M, China Univ of Petroleum; Shang, J H, CNOOC, China

55. GEOTECH XI: Geohazard & Geoinformatics (V. 2)

Thursday June 25 14:00 Room 1001

Chair: Kawabata, T, Kobe Univ, Japan

Experience of Mathematical Simulation for a Geotechnical Assessment of Construction of "Federation" Island

Koff, G L, Chesnokova, I V, Georisk R&D Centre, Russia

Behavioral Trait Investigation of Large Scale Underground Space for Seeking a Road: A Case Study in KRTS, Taiwan

Chi, Y Y, Chen, Y L, Lee, Y F, Chang Jung Christian Univ, Taiwan, China

Analytic Network Process Method Integrated with GPC/GIS Technology Used to Identify Potential Slope Failures in Central Taiwan

Chen, K T, Tsai, K J, Shieh, C L, Chang Jung Christian Univ, Taiwan, China

A Study on Earthquake and Typhoon Induced Regional Debris Flow Hazards

Ku, C Y, National Taiwan Ocean Univ, Taiwan, China

Establishment of the Marine GIS Information Service System in Taiwan Coastal Area

Chien, L K, Feng, T S, Yen, C C, Lee, B C, National Taiwan Ocean Univ, Taiwan, China

Establishment and Application of Global Satellite Tracking Web Geographical Information System

Yen, C C, Chien, L K, Feng, T S, Lee, B C, National Taiwan Ocean Univ, Taiwan, China

The Research of Data Exchange over Heterogeneous Geographic Information Systems

Kung, H Y, Pingtung Univ of Science and Tech; Chen, C H, National Chiao Tung Univ; Wu, C I, Lin, C Y, Pingtung Univ of Science and Tech; Lo, C C. National Chiao Tung Univ; Tsai, K J, Chang Jung Christian Univ, Taiwan, China

Application of Random Walk Particle Tracking to the Delineation of Capture Zones

Inoue, K, Takao, Y, Tanaka, T, Kobe Univ, Japan

A Study on Delineation of Debris Flow Hazards in Hualien County, Eastern Taiwan

Hsu, S M, Chao, C H, Wen, H Y, Sinotech Engineering Consultants; Ku, C Y, National Taiwan Ocean Univ; Chi, S Y, Sinotech Engineering Consultants, Taiwan, China

Development of a New Device for Measuring Contact Pressure Distribution of Geo-Materials

Oshige, S, Yasufuku, N, Omine, K, Kobayashi, T, Kyushu Univ, Japan

Mechanism of Geoenvironmental Contamination with LNAPLs at Sites Close to the Ocean

Flores, G, Inui, T, Katsumi, T, Takatsukasa, Y, Kamon, M, Kyoto Univ, Japan

56. COASTAL ENGINEERING XI: Sediment Transport (V. 3)

Thursday June 25 14:00 Room 1006

Chair: Lin, M C, National Taiwan Univ, Taiwan, China

The Effect of Coastal Structure Construction on the Longshore Drift of Sokcho Shoreline

Park, H B, Pukyong National Univ; Kang, Y K, Samsung Corp; Ryu, C R, Pukyong National Univ, Korea

Feasibility Study on Integrating Soft Countermeasure into Current Hard Shore Protection System around Taiwan Coast

Wu, Y C, Yang, R Y, Liou, J Y, Hwung, H H, Hwung, H Y, National Cheng Kung Univ, Taiwan, China

Acceptable Approximation of Numerical Integration for Bed or Total Sediment Transport

Kim, H S, Yoon, C S, Kookmin Univ, Korea

Local Scour in Front of Quay Wall Caused by Bow Thruster and Its Countermeasure Using Filter Units

Mizutani, N, Nakamura, T, Shinoda, Y, Koyama, H, Nagoya Univ, Japan

Flow Characteristics of the Suspended Flexible Curtain for Sediment Harvest

Li, Y H, Yu, G L, Shanghai Jiao Tong Univ, China

The Deviation Characteristics of Sediment Particles in Curvilinear Flows

Hong, G J, CCGRP/Shanghai Jiao Tong Univ; Yu, G L, Shanghai Jiao Tong Univ; Feng, L, CCGRP, China

A Combined Thermography -Neural Network for the Prediction of Eroded Caves behind Seawall

Lee, T L, Lin, H M, Chen, H H, Yang, R Y, Leader Univ, Taiwan, China

Erosion Mechanisms of Cohesive Bed and Bank Materials

Bui, T V, Deguchi, I, Arita, M, Osaka Univ, Japan

On the Calculation of Properties of Water Waves over a Layered Muddy Bed

Ng, C O, Univ of Hong Kong, Hong Kong, China

Studies on the Effect of Random Wave Loading on Dynamic Response of Sandy Seabed

Wang, Z T, Luan, M T, Dalian Univ of Tech, China

57. PIPELINES & RISERS X: Pipeline 3 (V. 2)

Thursday June 25 14:00 Room 1007

Chair: Gresnigt, A M, Delft Univ of Tech, The Netherlands

Co-Chair: Jukes, P, J P Kenny, USA

Effect of Diameter to Thickness Ratio and External Pressure on the Velocity of Dynamic Buckle Propagation in Offshore Pipeline

Omrani, Z, Abedi, K, Mostafa Gharabaghi, A, Sahand Univ of Tech, Iran

A Finite Element Method Approach on Liner Wrinkling of Snug Fit Lined Pipe

Hilberink, A, Heerema Marine Contractors; Peek, R, Shell International Exploration and Prod; Gresnigt, A M, Sluys, L J, Delft Univ of Tech, The Netherlands

Pipeline Laying Analysis Based on Substructure Method

Zhang, W S, Dalian Univ of Tech; Li, Z G, COOEC; Zhang, X F, Dalian Univ of Tech; Li, X, COOEC; Yue Q J, Dalian Univ of Tech, China

Saipem/ENI Offshore Pipeline Repair System (SiRCoS)

Spinelli, C M, ENI Gas & Power, Italy

The Latest Developments in Upheaval Buckling Analysis for Buried Pipelines

Wang, J, Ayman, E, Sun, J, Wang, S, Duan, D, Jukes, P, J P Kenny, USA

58. OCEAN & WIND ENERGY VII: Wind 2 (V. 1)

Thursday June 25 14:00 Room 1101, 11F

Chair: Vorpahl, F R, Fraunhofer Center for Wind Energy & Maritime Eng (CWMT), Germany

Co-Chair: Chen, X B, Dalian Univ of Tech, China

Design and Construction Considerations for Offshore Wind-Turbine Foundations in the United States

Malhotra, S, Parsons Brinckerhoff, USA

Numerical Simulation of Wave and Current Interaction with Rotary Pontoon of Offshore Wind Turbine

Cheboxarov, V V, Cheboxarov, V V, Inst for Automation and Control Processes, FEB RAS, Russia

Inclusive Environmental Assessment for Offshore Wind Power Stations

Murai, M, Aono, T, Yokohama National Univ, Japan

A Straight-Bladed Vertical Axis Wind Turbine with a Directed Guide Vane Row - Effect of Guide Vane Solidity on the Performance

Takao, M, Takita, H, Matsue National College of Tech; Maeda, T, Kamada, Y, Mie Univ, Japan

Experimental Study of a New Wind Energy Collecting System

Sun, Z J, Tang, Z B, Zhejiang Ocean Univ, China

Estimation Method for Offshore Wind Energy Using Synthetic Aperture Radar and Weibull Parameters

Kozai, K, Ohsawa, T, Takahashi, R, Kobe Univ; Takeyama, Y, National Inst of AIST, Japan

Characteristics of Offshore Winds at Shirahama Oceanographic Observatory

Shimada, S, Ohsawa, T, Serizawa, S, Yoneda, I, Kyoto Univ, Japan

附錄 B　發表論文之簡報資料

Study of Harbor Resonance in Future Deployment of Taipei Harbor

Jaw-Fang Lee[1], *Yung-Fang Chiu*[2], *Liang-Sheng Ho*[2], *and Jeng-Hong Kao*[3]

[1]Institute of Ocean Technology and Marine Affairs, National Cheng Kung University, Tainan, Taiwan

[2]Harbor and Marine Technology Center, Institute of Transportation, Ministry of Transportation and Communication, Taipei, Taiwan

[3]Department of Hydraulic and Ocean Engineering, National Cheng Kung University, Tainan, Taiwan

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Objective:

1. Use a numerical model to study if resonance problem occur in the future deployment of Taipei Harbor.
2. Find out resonance characteristics
3. Suggest possible prevention strategy

2

Presentation Outline

1. Introduction
2. Observation data of Typhoon Haitang
3. Resonance numerical model
4. Numerical results
5. Summary

3

Location of Taipei Harbor (Taiwan)

Location of Taipei Harbor

Present Formation of Taipei Harbor

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Mission of Taipei Harbor

http://www.tpport.gov.tw/

1. Serving as an auxiliary port for neighboring Keelung Harbor , and relieving some heavy traffic burden.
2. enhancing the port's competitiveness and complying with privatizing policies, plans were made to lease Taipei Harbor's facilities and open to public and private investment.

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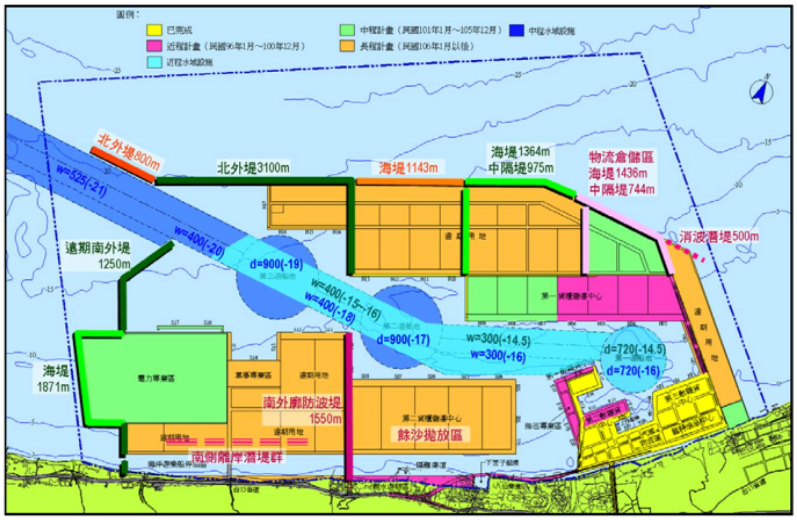
Future Deployment of Taipei Harbor (after 2017)



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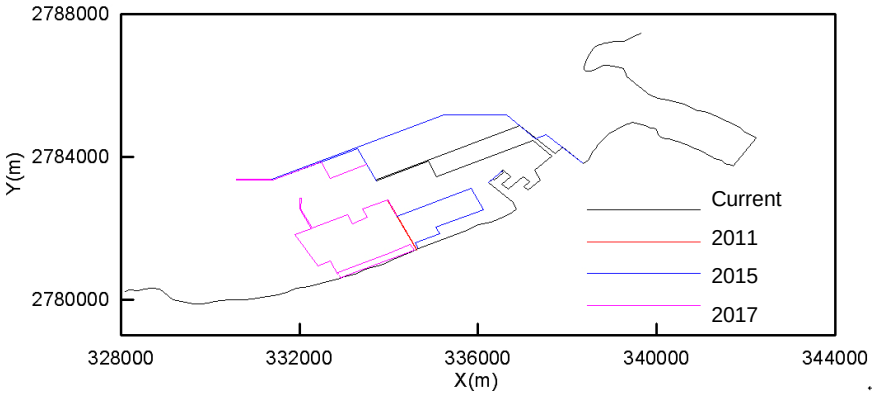
Digitized Plot used in Numerical Computation



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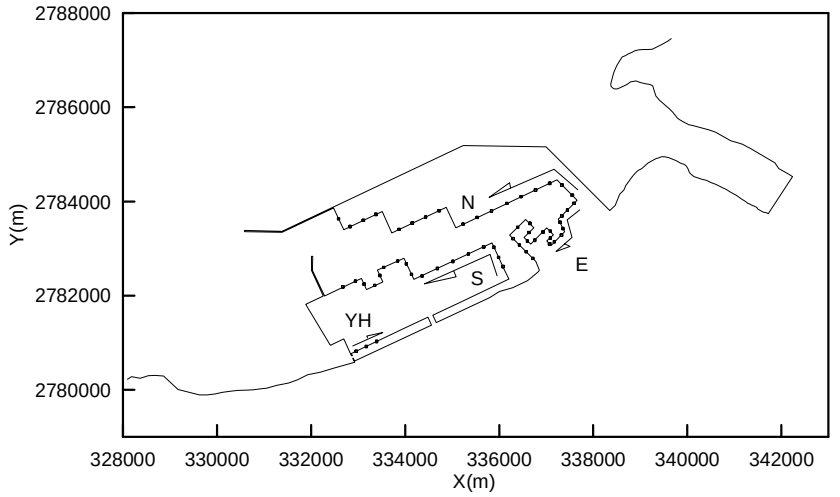
Pier Positions on the boundary



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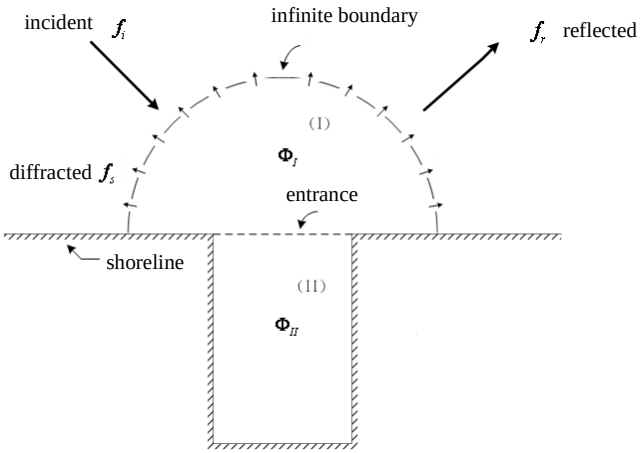
Numerical Model of Harbor Resonance (J.J. Lee, 1969)



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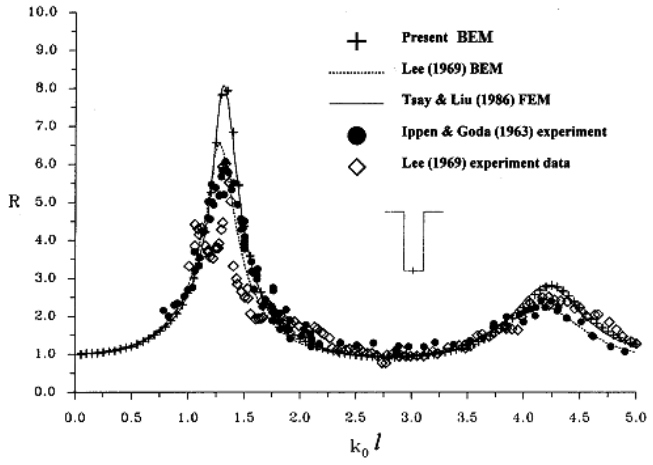
Model Verification

$$R = \frac{|\eta_2|}{A_i(f_i + f_r)e^{-i\omega t}} = \frac{|A_i f_2 e^{-i\omega t}|}{|A_i(f_i + f_r)e^{-i\omega t}|} = \frac{|f_2|}{|f_i + f_r|}$$



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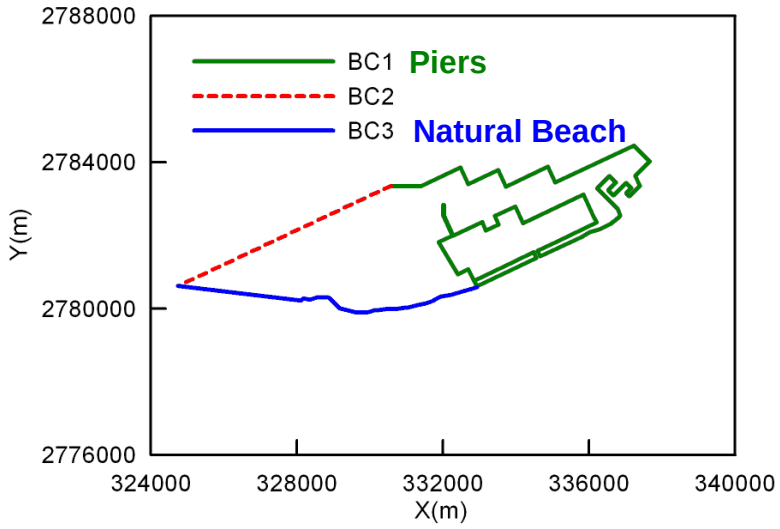
Numerical Boundary Conditions
（T<20sec，Kr=0.2；T≧20sec，Kr=0.9)



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Incident Wave Data

(wanted to know if resonant frequencies appear in the real world, Typhoon waves)

1. Wave datat taken from an observation tower outside Taipei Harbor
2. Model Typhoon Haitang (2005/7/16 - 2005/7/20)

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Location of Observation Tower outside Taipei Harbor

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Observation Tower outside Taipei Harbor

- Measured data

1. Wind (Young Brand speedometer)
2. Wave height, wave period
3. Current speed and direction
4. Tide elevation (S-4ADW tide, wave, current meter)

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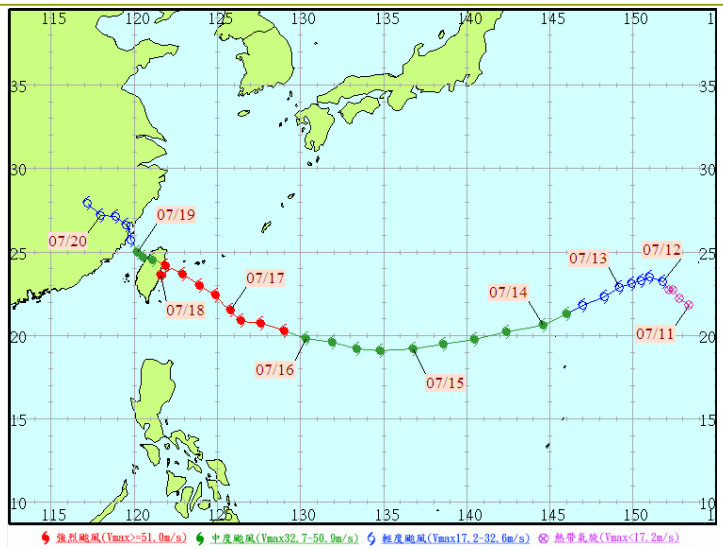
Path of Typhoon Haitang (2005/07/16-2005/07/20)



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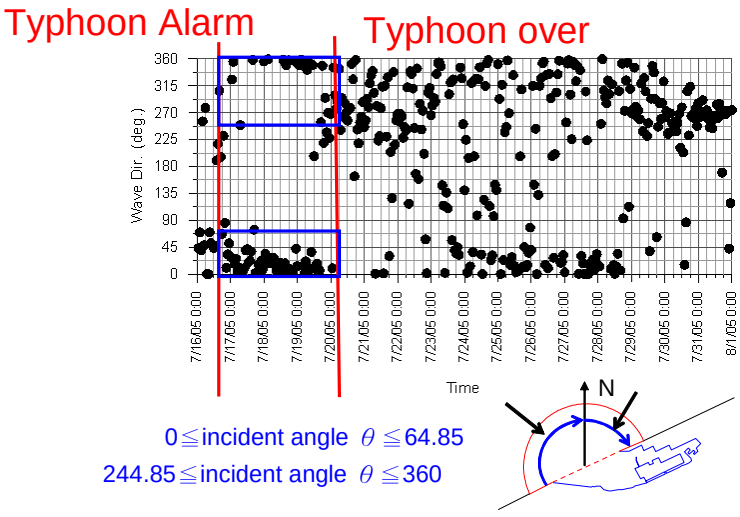
Data Analysis of Typhoon Haitang (wave direction)



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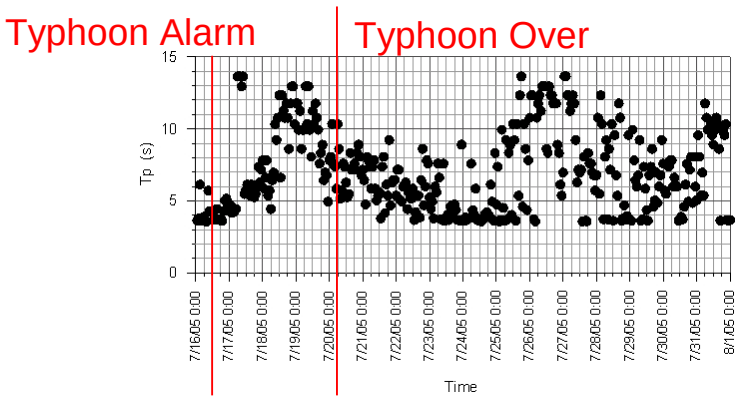
Data Analysis of Typhoon Haitang (wave period)



4sec < wave period < 14sec

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Incident Waves of Typhoon Haitang on Taipei Harbor

Time		Dir. (°)	Tp (sec)
7/17	00:00	27	4.2
		50	4.8
		∗ 326	5.2
	06:00	11	4.2
		∗ 22	4.5
	12:00	11	5.4
		22	6.2
		∗ 45	13.8
	18:00	11	5.0
		22	5.5
		∗ 360	6.2

7/18	00:00	11	5.8
		33	6.8
		∗ 360	7.8
	06:00	17	5.4
		∗ 27	6.4
		33	7.0
	12:00	5	6.6
		∗ 22	10.8
		∗ 360	12.2
	18:00	5	8.7
		∗ 349	10.9
		360	11.0

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7/19	00:00	∗ 20	10.0
		∗ 45	11.8
		∗ 349	13.0
	06:00	5	8.8
		∗ 337	10.2
		358	13.0
	12:00	∗ 20	8.0
		40	10.0
		355	11.8
	18:00	※ 292	8.2
		349	10.0

7/20	00:00	∗ 11	6.8
		343	10.4
	06:00	※∗ 292	8.6
		343	10.2

∗ For future deployment
※ For recreation berthing area

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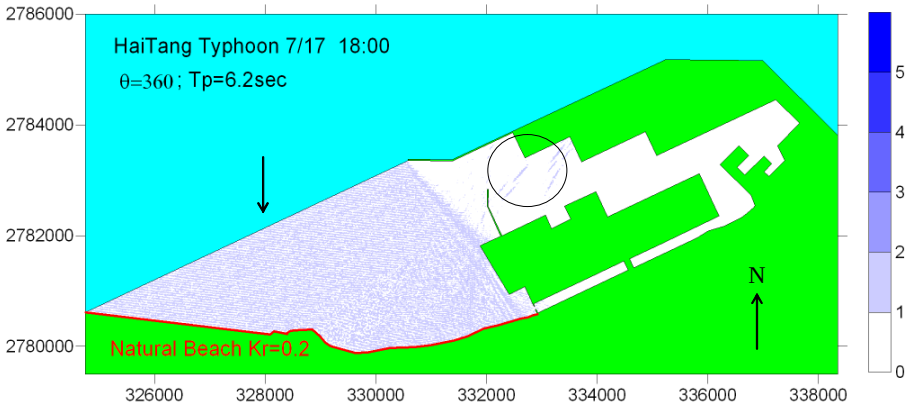
Computation Results ：

Wave Pattern (AP) inside Taipei Harbor



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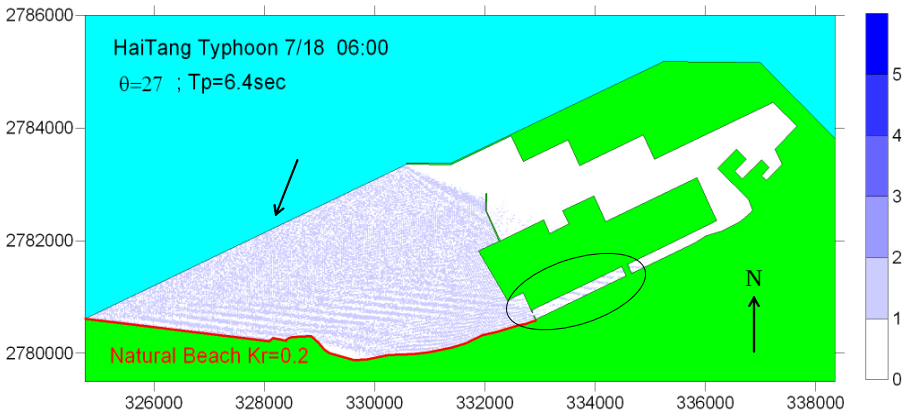
Wave Pattern (AP) inside Taipei Harbor



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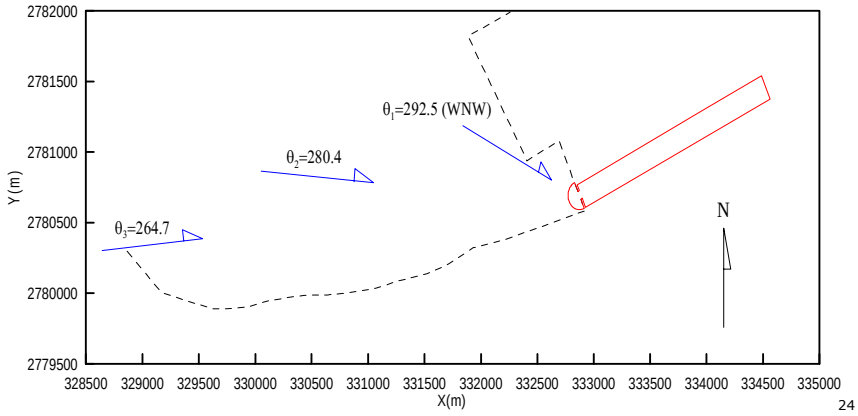
Computation for Yacht Piers

Influential Incident Angles to Yacht-Pier Area



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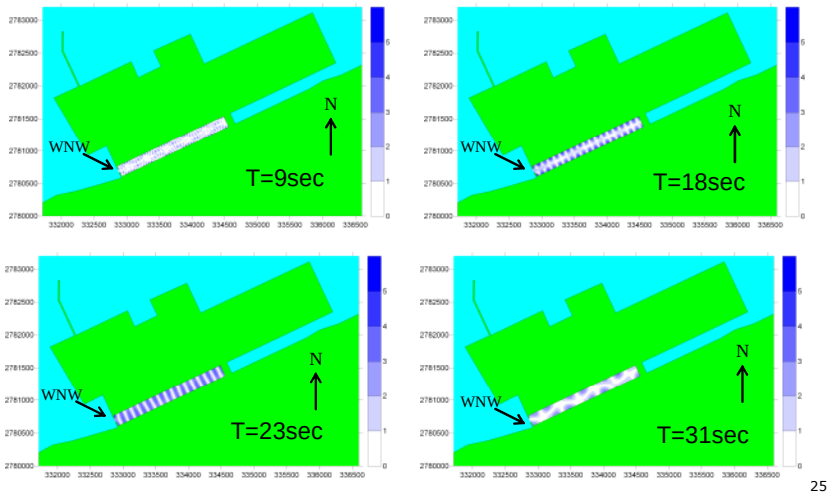
Wave Pattern for WNW Waves at Yacht Piers



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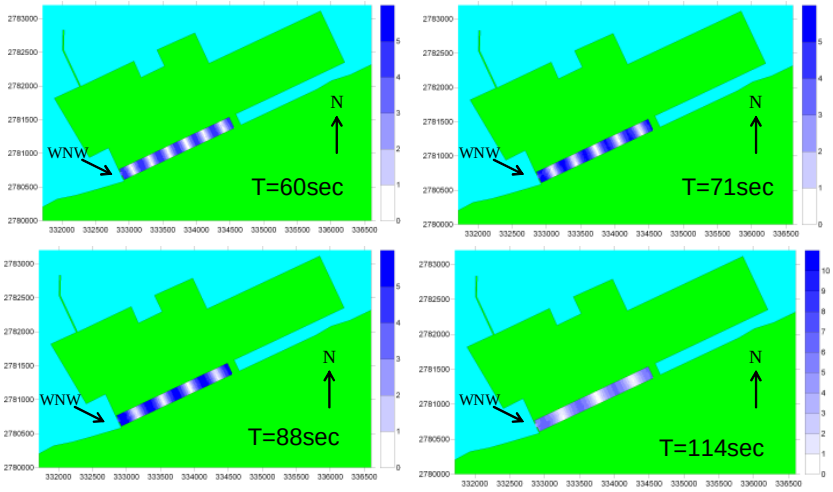
Resonant Pattern for WNW Waves at Yacht Pier



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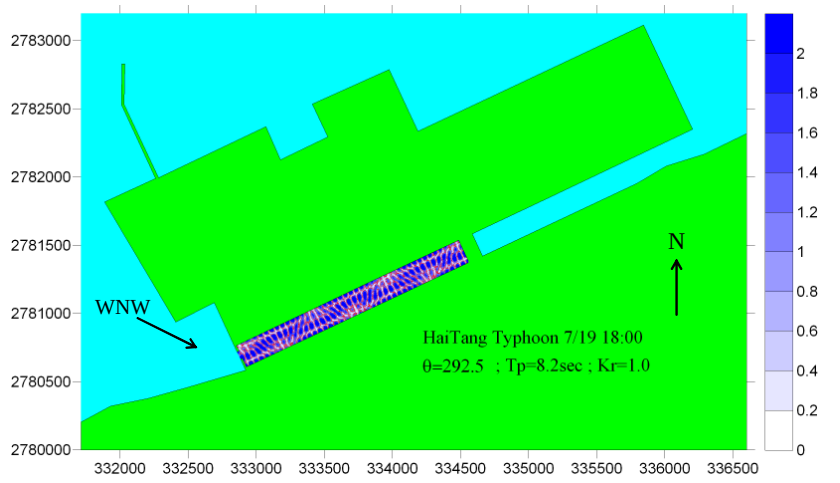
Resonant Pattern for Typhoon Haitang at Yacht Piers
(different reflection coefficients)



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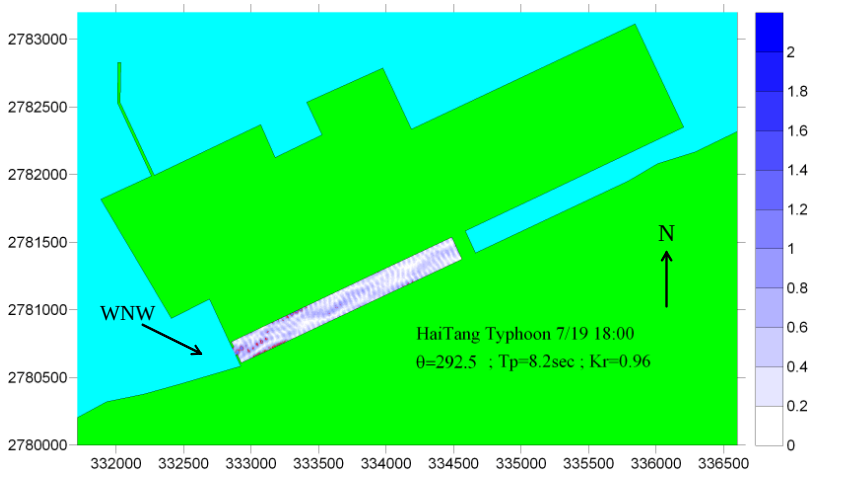
Resonant Pattern for Typhoon Haitang at Yacht F



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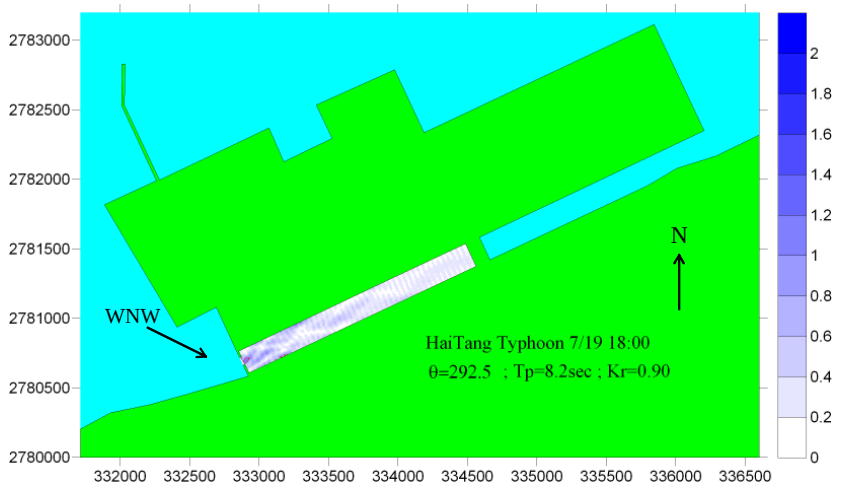
Resonant Pattern for Typhoon Haitang at Yacht F



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Conclusion

1. The future deployment of Taipei Harbor is examined to check wave resonance possibility. A boundary element model is used in the calculation. A model Typhoon Haitang (2005) is used for simulating incident wave conditions.
2. Computation results indicate that resonance could occur at yacht piers. Possible prevention measures should be considered in the future.

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