Pacific Congress on Marine Science and Technology (PACON 2005)

Harmonization of Port and Industry

Program & Abstracts

Changhua, Taiwan 6 – 9 November 2005

ISBN: 978-1-7138-1848-9

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2005) by PACON International All rights reserved.

Printed with permission by Curran Associates, Inc. (2021)

For permission requests, please contact PACON International at the address below.

PACON International 1000 Pope Road, MSB 205A Honolulu, Hawaii 96822 USA

Phone: (808) 956-6163 Fax: (808) 956-2580

Pacon.Hawaii@gmail.com

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Phone: 845-758-0400 Fax: 845-758-2633

Email: curran@proceedings.com Web: www.proceedings.com

PACON 2005

Harmonization of Port and Industry

ABSTRACTS TABLE OF CONTENTS

Keynote Addresses

| Soft Civilization: An Era for the Pacific | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Ocean Monitoring Systems - A Challenge for Global and Regional Observations | |
| Technical Papers and Sessions | |
| OCEAN SCIENCE AND TECHNOLOGY (OST) Coordinators: Hsien-Hua Lee (Taiwan) and Norman Estabrook (USA) | |
| OST-1 | |
| Ocean Mapping And Seafloor Characterization (GIS, Ocean Systems) Chair: Yong-Qi Chen (China) Co-Chair: Chih-Chung Kao (Taiwan) Co-Chair: Shiahn-Wern Shyue (Taiwan) Co-Chair: Chiang-Mei Chu (Taiwan) |) |
| The German Hydrographic Consultancy Pool (GHYCOP): An Economic Association | |
| and Public Private Partnership in Hydrography and Applied Oceanography | |
| Seafloor Classification with the Approach of Ga-Based LVQ Neural Network | |
| Developing of a 2D and 3D Topographic Map Provision System using the Web | |
| GIS Application on the Engineering Basic Data at the Port of Kaohsiung | |
| Segmentation Algorithm for Digital Seabed Terrain | |
| OST-2 | |
| Marine Biotechnology | |
| (Natural Products, Manufactured Products) Chair: Yeong-Jen Chiu (Taiwan) | |
| Co-Chair: Chuang-Yuan Li (Taiwan) Co-Chair: Jhy-Horng Sheu (Taiwan) | |
| Co-Chair: Mark Huntley (USA) | |
| Marine Shrimp Genomics | A7 |
| Aquaculture Cage Net Volume Deformation Rate Improvement | A7 |
| Natural Marine Biotoxins: In Vitro Biosynthesis with Bacterial Cultures | Αŏ |

OST-6

| 051-0 | |
|----------------------------------------------------------------------------------------------------------|--------|
| Operational Experiences in Environmental Monitoring | |
| (Techniques of Buoys & Ships of Opportunity, New Developments, Sensors for Long | g-Tern |
| Applications, Biofouling, Scientific & Monitoring Applications) | |
| Chair: Friedhelm Schroeder (Germany) | |
| Co-Chair: Kuo-Tung Chang (Taiwan) Co-Chair: Chung-Ho Chien (Taiwa | ın) |
| co chair rang chang (ranyan) | , |
| On the Application of Realtime Sea Water Quality Alert System | |
| to the Environmental Management in Dapeng Lagoon | AS |
| Automated Observing Systems on Ferry Boats: Overview, Costs and Benefit | |
| Sensors for Automated Chemical/Biological Measurements in Marine Waters | |
| Wave Profile Measurement by the Overlooking Capture | |
| wave Florite Measurement by the Overlooking Capture | A10 |
| OST-7A & B | |
| Climate Change | |
| (Climate Prediction, Socio-economic Value of Climate Prediction, Adaptation to Cl | imate |
| Fluctuations (ENSO), Mitigation of Climate Change) | mate |
| | |
| Chair: Lorenz Magaard (USA) | |
| Co-Chair: Kuang-Lung Fan (Taiwan) Co-Chair: Heh-Ling Maa (China) |) |
| New Developments at the International Center for Climate and Society (ICCS) | |
| | A 16 |
| of the University of Hawaii | |
| SST Forecast using the APCN Multi-Model Ensemble Climate Prediction System | |
| On the Socio-Economic Usefulness of Climate Prediction | |
| Coasts and Hinterland: Risk and Innovative Industries | |
| Hurricane Katrina: A Case Study for the Socioeconomic Value of Climate Predictions | |
| Abrupt Changes of Taiwan Heavy Rainfall Frequency | |
| Tourism and Climate Change in Hawaii: An Applied General Equilibrium Analysis | A13 |
| Renewable Biofuels and CO ₂ Sequestration by Microalgae: | |
| Renewable Biofuels and CO ₂ Sequestration by Microalgae: Engineering and Production Economics | A14 |
| Methane Hydrate Good News/Bad News - A Public Policy Perspective | A14 |
| | |
| | |
| COASTAL SCIENCE AND TECHNOLOGY (CST) | |
| Coordinators: Tai-Wen Hsu (Taiwan) and Young C. Kim (USA) | |
| | |
| CST-1A & B | |
| Hydrodynamics of Coastal Waters | |
| (Wave Characteristics, Wave Theories, Wave Transformation) | |
| Chair: Nai-Kuang Liang (Taiwan) Co-Chair: Stephen R. Hsu (Taiwan) | |
| Co-Chair: Yan-Yin Chen (Taiwan) Co-Chair: Chung-Pan Lee (Taiwan) | |
| | |
| Internal Wave Generation in Luzon Strait | |
| Spatial-Temporal Focusing of Nonsymmetrical Wave Form in Shallow Water | A15 |
| A Three-Dimensional Wave Field over a Bidirectionally Periodic Ripple Bottom | |
| A Numerical Study of Nonlinear Water Waves | |
| over a Three-Dimensional Porous Bottom | A10 |
| Artificial Neural Network in Prediction of Ocean Current | A17 |
| Nonlinear Analysis of Directional Wave Generations | A1 |

| A Study of Typhoon Swell Accumulation Effect | A18 |
|---------------------------------------------------------------------------------------------------|-----|
| The Transformation of a Solitary Wave Propagating over a Shelf | A19 |
| CST-2 | |
| Coastal Water Level Fluctuations | |
| (Tides, Storm Surges, Tsunamis, Sea Level Rise) | |
| Chair: (To be announced) | |
| Co-Chair: Ching-Piao Tsai (Taiwan) Co-Chair: John-Z. Yim (Taiwan) | |
| Establishment of the Tsunami Monitoring and Historical Tsunamis Retrieval System | A19 |
| The Influence of Tidal Station Allocation on Harbor's Tidal Data and Bathymetry Data. | |
| Nonlinear Sea Level Changes Found in Coastal Zones | A20 |
| The Sensitivity Analysis of Parameters of Wavewatch III Model | |
| CST-3 | |
| Harbor & Port: Design, Construction, and Maintenance | |
| (Planning, Design, Construction, Maintenance, Operations, Logistics) Chair: Ho-Shong Hou (Taiwan) | |
| Co-Chair: Long-Wen Lee (Taiwan) Co-Chair: Ching-Her Hwang (Taiwan) | 1) |
| The Information of AIS Applied to the Operation of VTS | A21 |
| The Optimization Research for the Seaports Transport Network under the Globalization | A22 |
| Development of Logistics Hub in Taiwan | A22 |
| Research of Redevelopment of Fugang Cruise Ship Port Planning, Taitung, Taiwan | A23 |
| CST-4A, B & C | |
| Coastal Structures | |
| (Wave Forces; Rubble-Mound Structures; Planning, Design, & Construction) | |
| Chair: Shi-Dun Guo (Taiwan) Co-Chair: Jea-Tzyy Juang (Taiwan) | |
| Co-Chair: Sheng-Wen Twu (Taiwan) Co-Chair: Jian-Quan Shen (Taiwan) | |
| Wave Drifting Force Free Model | |
| Overlaid Joint for Highway Bridges using Continuous Fiber Sheet | |
| Interaction between a Solitary Wave and a Submerged Vertical Plate | A24 |
| Second-Order Analysis of Waves Propagating over a Rectangular | |
| Impermeable Submerged Structure | A25 |
| Large-Reynolds-Number Flow across a Translating Circular Cylinder | |
| with High Oscillating Frequencies | A25 |
| The Application of Series Submerged Breakwaters | |
| on Kaohsung Chikan Coastal Protection | A26 |
| A Study on Wake Structures Downstream of an Impulsively | |
| Started Circular Cylinder Using PIV | |
| Flow Characteristics around a Circular Cylinder near a Plane Boundary | |
| Effect of Wave Reflection to Runup on Smooth Dike | |
| Dynamic Analysis of Waves Acting on Single-Point Moorings | |
| Development of a Warning System for Coastal Disaster around Taiwan Island | |
| Analysis of High-Speed Projectile on Sea Wall | A29 |

CST-5

Ports, Harbors, and Development of the Waterfront (Planning, Design, and Construction; Moorings)

| Chair: Chih-Min Lin (Taiwan) Co-Chair: Ming-Hui Shieh (Taiwan) | |
|-----------------------------------------------------------------------------------|-------|
| Co-Chair: Yao-Tang Tsai (Taiwan) Co-Chair: Chang Lin (Taiwan) | |
| | |
| Afforestation and Shore Recreation Planning at An-Pin Port | |
| Basic Consideration Related Coastal Zone (Land / Ocean Space) in Regional Science | A30 |
| The Feasibility Study of Container Terminal No. 6 Construction Project | |
| in the Port of Kaohsiung | A30 |
| The Structual Changes of the Metropolitan Shore Side Focuses on Fishery Areas | |
| Use of Impact-Echo Method for Evaluation Defects of RC Structure in the Harbor | |
| Integrate Development of Taichung Port | |
| integrate Development of Talenting Fortimental Control of Talenting Fortiments | 1132 |
| CST-6 | |
| Coastal Sediment Problems | |
| Chair: Shan-Hwei Ou (Taiwan) Co-Chair: Tai-Wen Hsu (Taiwan) | |
| Co-Chair: Yung-Fang Chiu (Taiwan) Co-Chair: Chih-Chong Wen (Taiwan |) |
| eo chair. Tang Tang cina (Tarwan) | , |
| Morphology, Hydrodynamics and Sediment Characteristics | |
| of the Changyun Sand Ridge Offshore Western Taiwan | A32 |
| Influence of Breaker Type to Wave Overtopping | |
| Wind Tunnel Simulation of using Incineration Bottom Ash Solidification | 1133 |
| on Coastal Sand Fixation | ۸ 2 2 |
| | |
| Observation and Analysis of Current and Suspended Sediment in Tanshui River | |
| A Preliminary Study on Shingle Beach Profile Change with the Small-Scale Model | |
| Countermeasures Against Beach Erosion around Taiwan Coast | A35 |
| | |

CST-7A & B

Coastal Environmental Problems

(Coastal Pollution, Environmental Impact)

Chair: Hwung-Hweng Hwung (Taiwan) Co-Chair: Bao-Shi Shiau (Taiwan) Co-Chair: You-yao Tang (China) Co-Chair: Juu-en Chang (Taiwan)

| Development on Purification System of the Water Quality | |
|---------------------------------------------------------------------------------|--------|
| by Using of Cohesion Powder | A35 |
| An Estimate of the Eddy Viscosity and Eddy Diffusivity in a Stratified Estuary | A36 |
| Effect of Electrochemical Chloride Removal Treatment on the Corrosion | |
| of Steel in Concrete | A36 |
| Direct Numerical Simulations in Confined Compressible Mixing Layer | A37 |
| The Primary Seawater Compositions Analysis of Five Major Ports in Taiwan | A37 |
| The Evaluation of the Binding Coefficient Between PAHs | |
| on Colloid Organic Matters in Estuary: In Field and in Laboratory | A38 |
| Producing Geo-Referenced Aerial Video Mosaics for Coastal Environment Monitorin | g. A38 |
| The Study on the Tide Evolution at the Yangtze Delta Region | A39 |
| Assessment of a Tropical Estuary by Application of a Simple Process Model | A39 |

| CST-9 |
|---------------------------------------------------------------------------------------------------------------------|
| Coastal Earthquakes and Earthquake Hazards |
| Chair: Chi-Chang Lin (Taiwan) Co-Chair: Chien-Chih Chen (Taiwan) |
| Co-Chair: Lun-Chang Chou (Taiwan) Co-Chair: Jiunn-Jye Zheng (China) |
| Taiwan Model for Evaluating Liquefaction Potential using SPT Data |
| The Evaluation of Soil Liquefaction Potential in She-Tou Area |
| A New Specimen Preparation Method on Calibration Chamber in Silty Sands |
| Building a Forecast System for Near-Shore Disaster Prevention and Rescue |
| Tsunami Disaster Monitoring using Remote Sensing Satellite Data |
| MARINE RESOURCE MANAGEMENT AND DEVELOPMENT (MRMD) Coordinators: Hwung-Hweng Hwung (Taiwan) and Kenji Hotta (Japan) |
| MRMD-3A & B |
| Marine Fishery |
| (Science and Management) |
| Chair: Dah-Wen Shieh (Taiwan) Co-Chair: Chen-Tsung Fan (Taiwan) |
| Co-Chair: Chung-Ti Chueh (Taiwan) Co-Chair: Yoshifusa Yamada (Japan) |
| The Status and Conservation of Coral Reefs in Taiwan |
| Catch Estimation using Acoustic Surveys in the Coastal Zone of Northern Taiwan A43 |
| A Study on the Coal Supply Plan to Changgong Thermal Power Plant |
| Basic Study on Level of Ultraviolet Exposure during Fishing Operation |
| Surface Water TCO_2 Variation Analysis using CO_2 Feedback Model and Satellite Data . A44 |
| Distribution of Coral Reefs off Kenting, South Coast of Taiwan |
| Experimental Study on Geometry and Loads of Aquaculture Cage in Uniform Flow A45 |
| Spatiotemporal Variation of Species Composition of Larval Anchovy Fishery |
| in Taiwan A46 |
| Development of Fishing Port Facilities as Nursery for Fishery Resources |
| Population Dynamics and Stock Assessment of Swordfish (<i>Xiphias gladius</i>) in the Waters around Taiwan |
| Utilization, Management and Satellite Tracking on Whale Shark in Taiwan Area |
| Ottinzation, Management and Saterine Tracking on Whate Shark in Tarwan Mea |
| MRMD-4 Marine Recreation and Tourism |
| (Socio-economic/Ecological Benefits, Impacts, Growth Potential) |
| Chair: Chen-Tien Su (Taiwan) |
| Co-Chair: Chang-Hung Chou (Taiwan) Co-Chair: Tong-Liang Hwang (Taiwan) |
| |
| Extensively Ecological Solution for Shore Protection Matter |
| Soft Solution for Shore Protection and Coastal Recreation on Shuang-Chun Coast |
| An Observation on the People Supporting Cultural Exchanges Cities |
| and Fishing Communities |

A Study on the Land Use Strategies of Taiwan's Coastal Zone Tourism Facilities

WORKSHOPS (WKSP) Coordinator. Chin-Yuan Hsieh (Taiwan)

WKSP-4

| The Spratley Islands and International Marine Science Cooperation |
|-----------------------------------------------------------------------------------------|
| (Satellite Remote Sensing, Bathymetry Mapping, Environment Monitoring) |
| Chair: Antony Liu (Japan) |
| Co-Chair: Chien-Kee Chang (Taiwan) Co-Chair: Ji-Ji Chen (Taiwan) |
| Co-Chair: Edmond C.I. Liu (Taiwan) Co-Chair: Chao-Shing Lee (Taiwan) |
| |
| Acidification of Seawater in the South China and Sulu Seas |
| Mapping from Formosat-2 Stereo Imagery: Dem Generation over Itu Aba Island |
| Observations of CHL-A and Physical Environments around Nansha Islands |
| using Satellite Data |
| Using SAR to Study the Environment of Spratly Islands |
| Chlorophyll-A Pattern in Spratly Islands Sea Area |
| El Nino-Related Offshore Phytoplankton Bloom Events areound the Spratley Islands A53 |
| Mapping the Atolls of the Spratlys using LANDSAT: |
| Its Significance in the Productivity of the South China Sea |
| |
| WKSP-5 |
| Ocean Observing Systems |
| Chair: Adam Zielinski (Canada) |
| Co-Chair: Chia-Chuen Kao (Taiwan) Co-Chair: Yueh-Jiuan Hsu (Taiwan) |
| On the Developement of the Automatic Shipboard Marine-Meteorological Observation System |
| Precise Acoustic Navigation System for Bottom Based |
| Remotely Operated Vehicles (ROV) |
| |
| |
| STUDENT POSTER SESSION |
| Coordinators: Sherwood Maynard (USA) and Jea-Tzyy Juang (Taiwan) |
| |
| Application of the Method of Fundamental Solutions |
| to Solve Advection-Diffusion Equations |
| Laboratory Measurement of Entrained Air Bubbles in the Nearshore Breakers |
| Method of Fundamental Solutions for Water Wave Diffraction |
| by Thin Porous Breakwater |
| Nonlinear Random Waves and the Associated Spectra of Shear Stresses |
| Numerical Simulation of Water Waves using Level Set Method |
| Propagation of a Solitary Wave over a 3D Submerged Breakwater |
| |
| Index by Title |
| Index by Author |
| |