

	Current Position: Associate Professor
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Research Interested	<ul style="list-style-type: none"> <li>◆ Meteceanic Observation (Systems Integration, Data Quality Control)</li> <li>◆ Radar Monitoring</li> <li>◆ Statistical Analysis</li> <li>◆ System Dynamic Analysis</li> <li>◆ Marine Tourism and Recreation Management</li> <li>◆ Information Management</li> </ul>
Courses Offered	<ul style="list-style-type: none"> <li>◆ Ocean Information Management</li> <li>◆ Ocean Survey and Exploration Technique</li> <li>◆ Ocean Information Analysis and Management Application</li> <li>◆ System Dynamics for Ocean Information</li> <li>◆ Ocean Exploration</li> <li>◆ Structural Theory (1)</li> </ul>
Services	<ol style="list-style-type: none"> <li>1. Advisor of Master, PhD students in IOTMA</li> <li>2. A committee member of project evaluation and examination for government (2007~)</li> <li>3. Researcher and Deputy director of Coastal Ocean Monitoring Center, NCKU(1987~)</li> <li>4. The 2nd Ocean Radar Conference for Asia / ORCA, Organizing Committee Member (04/2014)</li> <li>5. Inviter of Dr. C. C. Teng, Chief of Observing Systems Branch, NDBC/NOAA for academic access and technical exchange (2008, 2009, 2012, 2013)</li> <li>6. The 35th National Conference on Theoretical and Applied Mechanics — Preparatory Committee (11/2011)</li> <li>7. Taiwan Ocean Workshop 2008 – Secretariat&amp; session chair (10/2008)</li> <li>8. A Conference of establishing an Ocean Ministry for Taiwan Government, 2008, NCKU – Discussants</li> <li>9. International Conference on Coastal Engineering (ICCE 2008), Hamburg, Germany, 2008 – Paper Presentation</li> <li>10. 18th International Offshore and Polar Engineers Conferences</li> </ol>

(ISOPE 2008). Vancouver, Canada. –Paper Presentation  
11. The Chinese-German Joint Symposium on Hydraulic and Ocean Engineering (JOINT 2008), Darmstadt, Germany, 2008 –Paper Presentation

#### Representative Publications

##### A. Referred Paper

1. Chuang, Laurence Zsu-Hsin, and Li-Chung Wu (Published online 2013) “Study of Wave Group Velocity Estimation from Inhomogeneous Sea-Surface Image Sequences by Spatiotemporal Continuous Wavelet Transform,” IEEE Journal of Oceanic Engineering. (SCI) (Accepted in 2013)
2. Chuang, Laurence Zsu-Hsin, Li-Chung Wu\*, and Jong-Hao Wang (2013) “Continuous Wavelet Transform Analysis of Acceleration Signals Measured from a Wave Buoy,” Sensors, Vol. 13, Issue 8, pp.10908-10930. (SCI)
3. Wu, Hsing-Ti, Laurence Zsu-Hsin Chuang, and Li-Chung Wu (2013) “Spatial-Temporal Analysis of Sea States for Sailing Activities in Dapeng Bay National Scenic Area, Taiwan,” International Journal of Developmental Sport Management, Vol.2, No.2, pp. 1-14.
4. Bau, Hsiang-Yu, Li-Chung Wu, and Laurence Zsu-Hsin Chuang (2013) “Detection of Thermal Effluent Discharge Using Sea Surface Nautical Radar Images,” IEEE Geoscience and Remote Sensing Letters, Vol. 10, No. 3, pp. 612-616. (SCI, EI)
5. 吳行悌、莊士賢、吳立中 (2012) “帆船活動的氣象條件評估：以大鵬灣國家風景區為例”，島嶼觀光期刊，第5卷，第2期，第1-17頁。
6. Lin, Chien-Chi, and Laurence Zsu-Hsin Chuang (2012) “Using Fuzzy Delphi Method and Fuzzy AHP for Evaluation Structure of the Appeal of Taiwan’s Coastal Wetlands Ecotourism,” Advances in Intelligent and Soft Computing (AISC), Vol. 143, pp. 347-358, 2012, Business, Economics, Financial Sciences, and Management, ISBN 9783642279652. (EI)
7. Doong, D.J.\*, L.Z.H. Chuang, L.C. Wu, Y.M. Fan, C.C. Kao, and J.H. Wang (2012) “Development of an Operational Coastal Flooding Early Warning System,” Natural Hazards and Earth System Sciences, Vol. 12, pp.379-390. (SCI)
8. Chuang, Laurence Zsu-Hsin\*, Li-Chung Wu, Dong-Jiing Doong, and Chia-Chuen Kao (2011) “Coastal wave image analysis by spatio-temporal continuous wavelet transform on deriving wave celerity and wave group

speed,” Journal of the Chinese Institute of Civil and Hydraulic Engineering, Vol. 23, No. 4, pp. 417-427, December 2011 Language: Chinese.

9. 吳行悌、莊士賢 (2011)“國際海事組織「正規安全評估」與「目標導向標準」之回顧及我國採行之建議”，台灣海事安全與保安研究學刊，Vol. 2，No. 6，pp.1-19。
10. Wu, L.C., L.Z.H. Chuang\*, D.J. Doong, and C.C. Kao (2011) “Ocean remotely sensed image analysis using two-dimensional continuous wavelet transforms,” International Journal of Remote Sensing, Vol. 32, No. 23, pp.8779-8798. (SCI, EI)
11. 吳立中、莊士賢、許朝敏、王仲豪、高家俊 (2011)“時空合域影像於求取海面波流資訊之應用”，海洋及水下科技季刊，第 21 卷，第 1 期，第 29-33 頁。
12. Wu, L.C., L.Z.H. Chuang\*, D.J. Doong, and C.C. Kao (2011) “Quantification of Non-homogeneity from Ocean Remote-Sensing Images Using Two-dimensional Continuous Wavelet Transforms,” International Journal of Remote Sensing, Vol. 32, No. 5, pp. 1303-1318. (EI, SCI)

## **B. Conference Paper**

1. Chuang, Laurence Zsu-Hsin, and Chien-Chi Lin\* (2013) “Applying System Dynamics to Sustainable Development in Coastal Zone: Evaluation of Ecotourism Value of Anping Coastal Wetland Park with System Dynamics and Conjoint Analysis,” Proceedings of the 35th Ocean Engineering Conference, pp.477-482, National Sun Yat-sen University, Kaoshing.
2. Chung, Yu-Jen, Laurence Z.H. Chuang, and Wen-Chang Yang (2013) “Feasibility Studies of Ship Detections using SeaSonde HF Radar,” Proceedings of 2013 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2013), Melbourne, Australia, July 21-25, 2013.
3. Chung, Yu-Jen, Laurence Z.H. Chuang, Ya-Ting Hu, and Wen-Chang Yang (2013) “The Doppler Signal of High-Frequency Radar for Vessel Detection,” Proceedings of 2013 International Conference on Earth Observations and Societal Impacts (ICEO&SI 2013), Tainan, Taiwan, June 23-25, 2013.
4. Lin, Bo-Han, Yi Chang, Laurence Zsu-Hsin Chuang, and Ming-An Lee (2013) “An integrated management for Chiku lagoon in southern Taiwan,” Proceedings of 2013 International Conference on Earth Observations and Societal Impacts (ICEO&SI 2013), Tainan, Taiwan, June 23-25, 2013.
5. Wu, Hsing Ti, Laurence Z. H. Chuang, and Li Chung Wu (2012) “Sea

- state analysis for sailing activity in Dapeng Bay national scenic area, Taiwan,” Proceedings of 12th International Sport Sciences Congress, pp.223-226, DENİZLİ, TURKEY, December 12-14, 2012.
6. Chuang, Laurence Zsu-Hsin, and Chien-Chi Lin\* (2012) “Establishing an Evaluation Model for Economic Valuation of Ecotourism Development in Coastal Wetlands,” Proceedings of the 34th Ocean Engineering Conference, pp.499-504, National Cheng Kung University, Tainan.
  7. Chung, Yu-Jen \*, Laurence Z.H. Chuang, Wen-Chang Yang, and En-Yu Liang (2012) “A Feasibility Study on Target Detection with High Frequency Surface Wave Radar (HFSWR) ,” Proceedings of the 34th Ocean Engineering Conference, pp.583-588, National Cheng Kung University, Tainan.
  8. Wu, Li-Chung \*, Laurence Zsu-Hsin Chuang, Chia-Chuen Kao, and Jong-Hao Wang (2012) “Study of Inhomogeneous Sea Surface Features Using X-band Radar Images ,” Proceedings of the 34th Ocean Engineering Conference, pp.655-660, National Cheng Kung University, Tainan.
  9. Chuang, Laurence Zsu-Hsin, and Chien-Chi Lin\* (2012) “A Method for Group Decision Making Based on IG-TOPSIS and Interval-Valued Fuzzy Numbers,” International Symposium on Computer, Consumer and Control 2012, Taichung, Taiwan, June 4-6, 2012.
  10. Wu, Hsing-Ti, Laurence Z.H. Chuang, and Li-Chung Wu (2012) “Evaluation of Weather Conditions for Sailing Activity: a Case Study of Dapeng Bay Scenic Area, Taiwan,” Proceeding of 2012 1st International Conference on Marine and Sports Leisure Industry, I- Ocean Affairs Issues-003, pp.1-14, National Penghu University of Science and Technology.
  11. Chung, Yu-Jen, Laurence Z.H. Chuang, and Xin-Zhang Zhou (2012) “Port Strategies for GHG Emission Reduction - a Case Study on CO2 Control in the Port Kaohsiung,” Proceeding of 2012 1st International Conference on Marine and Sports Leisure Industry, F- Low Carbon, Green Leisure Related Issues-002, pp.1-11, National Penghu University of Science and Technology.
  12. Chung, Yu-Jen, H.-Y. Bau, Tzu-Huang Chang, and Laurence Z.H. Chuang (2012) “Technology Management Perceptions of Integrating Ocean Information in Taiwan,” Proceeding of 2012 1st International Conference on Marine and Sports Leisure Industry, I- Ocean Affairs Issues-004, pp.1-14, National Penghu University of Science and Technology.
  13. Wu, Li-Chung, Laurence Zsu-Hsin Chuang, Yen-Bin Lin, and Chia Chuen Kao (2012) “Operational Ocean Monitoring Technologies around

Taiwan,” Proceedings of OCEANS’12 MTS/IEEE Yeosu, Korea, May 21 - 24, 2012. (EI)

14. 莊士賢\*、林千琪、黃瓊珠、陳貞如 (2012)“七股海岸濕地海生態系統服務價值評估初探”，第四屆海峽兩岸人工濕地暨第三屆台灣濕地生態系聯合研討會，第 66-70 頁，中央研究院，台北市。(2012.04.27-28)
15. Chung, Yu-Jen, Zsu-Hsin Chuang, Ching-Fang Chen, and Ren-Yu Chen (2012) “A Discussion on Total Life Cycle Systems Management from International Green Ship dismantling Trends,” Proceeding of Taiwan Society of Naval Architects and Marine Engineers Conference, pp. 091-1~091-7, Taipei.
16. Lin, Chien-Chi, and Laurence Zsu-Hsin Chuang (2011) “Using Fuzzy Delphi Method and Fuzzy AHP for Evaluation Structure of the Appeal of Taiwan’s Coastal Wetlands Ecotourism,” Proceedings of 2011 International Conference on Business, Economics, and Financial Sciences, Management (BEFM 2011), Jeju Island, Korea, December 30-31, 2011.
17. Chuang, Laurence Zsu-Hsin, Chiung-Chu Huang, and I-Ta Chung (2011) “System Dynamics Approach to Sustainability Management of Water Quality in Dapeng Bay,” Proceeding of the 33rd Ocean Engineering Conference, pp.625-630, Kaohsiung.
18. 吳行悌、莊士賢、吳立中 (2011)“我國遊艇活動發展之現況分析與推廣策略”，建國百年國家海洋政策規劃學術研討會，第 131-144 頁，國立澎湖科技大學，澎湖。
19. 林千琪、莊士賢、李明靜、余書瑾 (2011)“以不同專家觀點分析台灣海岸濕地生態旅遊吸引力”，2011 餐旅、休閒與觀光教育發展與趨勢國際學術研討會，第 427-436 頁，大仁科技大學，屏東。
20. Lin, Chien-Chi, Laurence Zsu-Hsin Chuang, and Ming-Ching Lee (2011) “Application of Fuzzy Delphi Method to Analysis of Ecotourism Attractions in Coastal wetlands,” Proceeding of 2011 The 13th Leisure, Recreation, and Tourism Research Symposium, pp.1983-1992.
21. 莊士賢、林千琪 (2011)“台灣海岸濕地生態旅遊吸引力因子之研究”，第一屆「STS、海洋、產業」研討會，第 4-21 頁，國立高雄海洋科技大學，高雄。
22. 莊士賢、鍾易達、黃瓊珠 (2011)“以系統動態學分析大鵬灣水質永續管理”，2011 中華系統動力學學會年會暨研討會，第 127-147 頁，大葉大學，彰化。

### **C. Technical Reports**

1. Applying System Dynamics to Sustainable Development in Coastal Zone: Combining System Dynamics Modeling and Conjoint Analysis to Assess

- Values of Ecotourism Development in the Anping Coastal Wetland Park, 2013, National Science Council Research Project, NSC 101-2221-E-006 -281.
2. System Dynamics Modeling for Sustainable Development of Coastal Zone: Model Development on Valuing Ecotourism of Coastal Wetland, 2012, National Science Council Research Project, NSC 100-2221-E-006 -017.
  3. System Dynamics Approach to Sustainability Management of Water Quality in Dapeng Bay, 2011, National Science Council Research Project, NSC 99-2221-E-006 -236.
  4. Spatio-Temporal Continuous Wavelet Transform for Wave-Current Image Analysis — Feasibility Study on the Land-based Radar for Detecting Waves and Currents in Coastal Area, 2010, National Science Council Research Project, NSC 98-2221-E-006 -251.
  5. Spatio-Temporal Continuous Wavelet Transform for Wave-Current Image Analysis — A New Approach to Analyzing Inhomogeneous Wave-Current Interaction, 2009, National Science Council Research Project, NSC 97-2221-E-006 -258.
  6. Spatio-Temporal Continuous Wavelet Transform for Wave-Current Image Analysis — (I) Wave Celerity and Wave Group Speed Estimation from Wave Images, 2008, National Science Council Research Project, NSC 97-2218-E-006 -010.

#### **D. Books**

1. 永田豐著、湯麟武譯、莊士賢編校，波浪傳奇：不可思議的海洋波浪，科技圖書(付梓中)。
2. 俞聿修 編著、莊士賢 編校 (2002) 隨機波浪及其工程應用 (Random Wave and its Applications to Engineering)，國立成功大學近海水文中心研究叢書 1，ISBN 957-8845-60-X。
3. 湯麟武 著、莊士賢 編校 (2000) 紛紜學(第二部) (Theory of Randomness II)，科技圖書，ISBN 957-655-306-7。
4. 湯麟武 著、莊士賢 編校 (2000) 紛紜學(第一部) (Theory of Randomness I)，科技圖書，ISBN 957-655-294-X。
5. 莊士賢、鍾易達、黃瓊珠 (2011)“以系統動態學分析大鵬灣水質永續管理”，2011 中華系統動力學學會年會暨研討會論文集，第 127-147 頁，中華系統動力學學會，彰化，ISBN 978-986-87198-0-0。
6. Chuang, Laurence Z.H., and C.C. Kao (1999) “Directional Characteristics of Winter Waves off Taishi Coast of Taiwan,” Coastal Engineering and Marina Developments, WIT Press, Southampton, Boston, ISSN:

1462-6098 (ISBN: 1 85312 686 1), pp. 253-262.

7. 莊士賢 (1992) 紛紜波浪作用於水平桿件之垂直力的統計特性分析，  
國立成功大學台南水工試驗所研究論文第二十三號。

### **E. Patents and Technology Transfer**

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