

# Select Proceedings from the 3rd International Conference on Water Resource and Environment (WRE2017)

Source: Journal of Coastal Research, 84(sp1)

Published By: Coastal Education and Research Foundation

URL: https://doi.org/10.2112/1551-5036-84.sp1.ii

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at <u>www.bioone.org/terms-of-use</u>.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

# Select Proceedings from the 3rd International Conference on Water Resource and Environment (WRE2017)

Guest Editors: D. Wang and P.A. Guido-Aldana



# Journal of **Coastal Research** Special Issue #84

An International Forum for the Littoral Sciences Charles W. Finkl Editor-in-Chief

Downloaded From: https://bioone.org/journals/Journal-of-Coastal-Research on 11 Sep 2024 Terms of Use: https://bioone.org/terms-of-use



Published by



### JOURNAL OF COASTAL RESEARCH

#### An International Forum for the Littoral Sciences

CHEF-HERAUSGEBER

313 S. Braeside Court Asheville, NC 28803, U.S.A.

BOOK REVIEW EDITOR Luciana S. Esteves Faculty of Science and Technology Bournemouth University Dorset, England, U.K.

lesteves@bournemouth.ac.uk

#### **EDITOR-IN-CHIEF Charles W. Finkl**

Coastal Education and Research Foundation, Inc. [CERF] **Editorial Offices:** 

> 7570 NW 47th Avenue (Editorial Office, Coconut Creek) Coconut Creek, FL CERF/JCR Website: http://www.CERF-JCR.org 33073, U.S.Á.

DEPUTY EDITOR-IN-CHIEF

Christopher Makowski Coastal Education and Research Foundation, Inc. /CERF/ 7570 NW 47th Avenue Coconut Creek, FL 33073, U.S.A. cmakowski@cerf-jcr.com

EDITORIAL ASSISTANT Barbara Russell Coastal Education and Research Foundation, Inc. /CERF/ 7570 NW 47th Avenue Coconut Creek, FL 33073, U.S.A. barbara@cerf-jcr.com

### ASSOCIATE EDITORS

MITHERAUSGEBER

Edward J. Anthony Coastal Geomorphology Dunkeraue, France Kenneth Banks Coral Reef Geomorphology Plantation, Florida Patrick Barnard Coastal Geomorphology Santa Cruz, California Lindino Benedet Oceanography, Modeling Florianopolis, SC, Brazil David M. Bush Coastal Geology & Hazards Carrollton, Georgia Ilya V. Buynevich Coastal Geology Philadelphia, Pennsylvania Javier A. Carrió Sediment Processes Valencia, Spain Insik Chun Coastal Engineering Seoul, Republic of Korea Vanda Claudino-Sales Coastal Dynamics, Dunes Ceará, Brazil Mark Crowell Coastal Zone Management McLean, Virginia Omar Defeo Sandy Beach Ecology Montevideo, Uruguay J. Javier Diez Coastal Geomorphology Madrid, Spain

Joseph F. Donoghue Coastal Morphology & Hazards Orlando, Florida

Jean Ellis Aeolian Sediment Transport Columbia, South Carolina Luciana Esteves Coastal Flooding & Erosion Bournemouth, England, UK Niki Evelpidou Sea-Level Change,

Palaeogeography Athens, Greece **Oscar Manuel Ferreira** 

Storm Impacts Faro, Portugal

Sediment Transport Boston, Massachusetts Chip Fletcher Coastal Geology Honolulu, Hawaii Kazimierz K. Furmańczyk Marine Cartography Szczecin, Poland Allen Gontz Geophysics, Stratigraphy San Diego, California Gary B. Griggs Coastal Engineering & Hazards Santa Cruz, California Pramod Hanamgond Coastal Geomorphology Belgaum, India Hans Hanson Coastal Protection Lund, Sweden Simon Haslett Paleoceanography Swansea, Wales, UK David Hill Nearshore Hydrodynamics Corvallis, Oregon Michael Hilton Dune Geomorphology & Ecology Dunedin, New Zealand Carl H. Hobbs, III Coastal Geology, Sand Mining Gloucester Point, Virginia James R. Houston

Duncan M. FitzGerald

Sea-Level Change Vicksburg, Mississippi Wenrui Huang Coastal Hydrodynamics Tallahassee, Florida Michael G. Hughes

Coastal Morphodynamics Canberra, ACT, Australia Federico I. Isla Sea-Level Change Mar Del Plata, Argentina

Nancy L. Jackson Coastal Geomorphology Newark, New Jersey Markes E. Johnson Paleoshores, Coastal Sand Dunes

Williamstown, Massachusetts

Timothy R. Keen Waves & Circulation Stennis Space Center, Mississippi Dieter H. Kelletat Coastal Geomorphology Essen / Cologne, Germany Joseph T. Kelley Sea-Level Change Orono, Maine Vic Klemas Remote Sensing Newark, Delaware Nobuhisa Kobavashi Coastal Engineering Newark, Delaware Vladimir N. Kosmynin Coral Reefs, Coastal Ecology Tallahassee, Florida Michael J. Lace Coastal Landforms & Processes West Branch, Iowa Stephen P. Leatherman Barrier Islands, Beach Erosion Miami, Florida Charles Lemckert Environmental Fluid Dynamics Bruce, ACT, Australia Hak Soo Lim Hydrodynamics, Coastal Engineering Busan, Republic of Korea Ioannis Liritzis Geophysical Proxy Data Rhodes, Greece J. Paul Liu Sea-Level Change, Deltas Raleigh, North Carolina Michel M. de Mahiques Sediment Processes São Paulo, Brazil Gonzalo C. Malvárez Beach Morphodynamics Seville, Spain Ashish J. Mehta Coastal Engineering Gainesville, Florida Nobuo Mimura Environmental Engineering Ibaraki, Japan Fatima Navas Coastal Morphodynamics Seville, Spain **Robert Nicholls** Global Climate Change Southampton, England, UK

Karl F. Nordstrom Coastal Geomorphology New Brunswick, New Jersey Julian Orford Gravel Beaches, Storm Events Belfast, Northern Ireland, UK Phil D. Osborne Sediment Dynamics Shoreline, Washington Hugh Parker Airborne Lidar Bathymetry Adelaide, SA, Australia Charitha B. Pattiaratchi Physical Oceanography Crawley, WA, Australia Carlos Pereira da Silva Coastal Zone Management Lisbon, Portugal **Michael Phillips** Coastal Geomorphology Swansea, Wales, UK Orrin H. Pilkey, Jr. Coastal Geology Durham, North Carolina Nobert P. Psuty Coastal Geomorphology New Brunswick, New Jersey Ulrich Radtke Coastal Geomorphology Duisburg-Essen, Germany Elijah W. Ramsey, III Coastal Image Processing Lafayette, Louisiana Kirt Rusenko Sea Turtles, Dune Restoration Boca Raton, Florida **Daniele Scarponi** Marine Paleoecology Bologna, Italy Anja Scheffers Coastal Hazards, Palaeoclimatology Lismore, NSW, Australia Vic Semeniuk Mangroves Perth, WA, Australia Douglas J. Sherman

Andrew D. Short Coastal Geomorphology



Davidson, NC 28036, U.S.A. jon@mediamine.net

e-mail: cfinkl@cerf-jcr.com WEB DESIGN & DEVELOPMENT

**COMITÉ DE REDACTION** 

17600 River Ford Drive

Pravi Shrestha Coastal Engineering Irvine, California Tom Spencer Biogeomorphology Cambridge, England, UK Marcel Stive Coastal Hydrodynamics Delft, The Netherlands Vallam Sundar Coastal Engineering Chennai, India E. Robert Thieler Marine Geology Woods Hole, Massachusetts Arthur C. Trembanis Coastal Morphodynamics Newark, Delaware Frank Van Der Meulen Coastal Zone Management Delft, The Netherlands Ana Vila Concejo Coastal Morphodynamics Sydney, NSŴ, Australia Ian J. Walker Coastal Dunes & Sediments Tempe, Arizona Ping Wang Beach Morphodynamics Tampa, Florida Phil Watson Sea-Level Change Gosford, NSW, Australia Allan Williams Coastal Geology Swansea, Wales, UK Harry F. Williams Paleotempestology Denton, Texas Colin D. Woodroffe Coastal Geomorphology Wollongong, NSW, Australia Zhaoqing Yang Hydrodynamic Modeling Seattle, Washington Robert S. Young

Coastal Processes Cullowhee, North Carolina Guoliang Yu Sediment Transport Shangai, China



THE JOURNAL OF COASTAL RESEARCH (JCR) (ISSN 0749-0208) IS PUBLISHED BIMONTHLY FOR \$115.00 FOR INDIVIDUAL US CERF MEMBERS, \$125.00 FOR INDIVIDUAL INTERNATIONAL CERF MEMBERS, \$519.00 FOR US INSTITUTIONS, AND \$541.00 FOR INTERNATIONAL INSTITUTIONS BY THE COASTAL EDUCATION AND RESEARCH FOUNDATION, INC. (CERF), 7570 NW 47TH AVENUE, COCONUT CREEK, FL 33073–2723. PERIODICALS POST-AGE PAID AT FORT LAUDERDALE, FL AND ADDITIONAL MAILING OFFICES. **POSTMASTER:** SEND ADDRESS CHANGES TO *JOURNAL OF COASTAL* RESEARCH, ALLEN PRESS ASSOCIATION MANAGEMENT, P.O. BOX 1897, LAWRENCE, KS 66044-3018.

© 2018 Coastal Education and Research Foundation, Inc. [CERF].

This paper meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper). Downloaded From: https://bioone.org/journals/Journal-of-Coastal-Research on 11 Sep 2024 Terms of Use: https://bioone.org/terms-of-use

#### **RÉDACTEUR-EN-CHEF**

Jon Finkl

Media Mine



### JOURNAL OF COASTAL RESEARCH

An International Forum for the Littoral Sciences

#### **Supporting Scientific Institutions**

- Consorzio Nazionale Interuniversitario per le Scienze del Mare (Co.N.I.S.Ma.) [Rome, Italy; www.conisma.it/]
  Delft University of Technology [Department of Hydraulic Engineering, Delft, The Netherlands;
- http://www.citg.tudelft.nl/over-faculteit/afdelingen/hydraulic-engineering/]
- Duke University [Earth and Ocean Sciences Division, Durham, North Carolina, U.S.A.; https://nicholas.duke.edu/marinelab]
- Griffith University [Center for Infrastructure Engineering and Management, Southport, Queensland, Australia; https://www.griffith.edu.au/]
- Ibaraki University [Center for Water Environmental Studies, Mito, Japan; http://www.cwes.ibaraki.ac.jp/]
- International Geographical Union (IGU) [Commission on Coastal System (CCS); http://www.igu-ccs.org/]
- Royal Belgian Institute of Natural Sciences [Management Unit of the North Sea Mathematical Models (MUMM), Brussels, Belgium; http://www.mumm.ac.be/EN/index.php]
- Rutgers University [Institute of Marine and Coastal Sciences (IMCS), New Brunswick, New Jersey, U.S.A.; http://marine.rutgers.edu/main/]
- Universidad de la República [Marine Science Unit, Montevideo, Uruguay; http://www.imber.info/Science/National-Network/URUGUAY]
- Universidade Nova de Lisboa [e-Geo Center for Geographical and Regional Planning Studies, Lisbon, Portugal; http://e-geo.fcsh.unl.pt/]
- University of California, Santa Cruz [Institute of Marine Sciences, Santa Cruz, California, U.S.A.; http://ims.ucsc.edu/]
- University of Delaware [School of Marine Science and Policy, Newark, Delaware, U.S.A.; http://www.ocean.udel.edu]
- University of Maine [Climate Change Institute, Orono, Maine, U.S.A.; http://climatechange.umaine.edu/]
- University of Sydney [Coastal Studies Unit, Sydney, New South Wales, Australia; http://sydney.edu.au/]
- University of Szczecin [Institute of Marine and Coastal Science, Szczecin, Poland; http://www.wnoz.ztikm.szczecin.pl/en/1/inom/structure/]
- University of Ulster [Environmental Sciences Research Institute, Coleraine, Northern Ireland; http://www.ulster.ac.uk/es/research/]
- University of Wales, Trinity Saint David [Swansea Metropolitan University, Mount Pleasant, Swansea, South Wales, U.K.; http://www.uwtsd.ac.uk/]
- U.S. Army Corps of Engineers [Coastal and Hydraulics Laboratory (CHL), Vicksburg, Mississippi, U.S.A.; http://chl.erdc.usace.army.mil/]
- U.S. Geological Survey [National Wetlands Research Center, Lafayette, Louisiana, U.S.A.; http://www.nwrc.usgs.gov/]

#### Aims and Scope of the Journal

Journal of Coastal Research, an International Forum for the Littoral Sciences, is dedicated to all aspects of coastal research. These include geology, biology, geomorphology (physical geography), climate, littoral oceanography, hydrography, coastal hydraulics, environmental (resource) management, engineering, and remote sensing. Although each field functions effectively within its ownpurview, the cross-disciplinary nature of coastal studies requires familiarity with other fields as well. Hence, the scope of topics is necessarily broad in order to address the complexity of coastal biophysical and socio-economic interactions. Because of the wide range of interrelated topics, the journal invites original contributions and manuscripts dealing with theory, methodology, techniques, and field or applied topic studies on interdisciplinary coastal issues.

The journal encourages the dissemination of knowledge and understanding of the coastal zone by promoting cooperation and communication between specialists in different disciplines. Natural scientists, for example, are encouraged to collaborate with professionals in other fields to prepare contributions relating to the coastal zone that foster increased appreciation of coastal environments and processes. By means of this journal, with its scholarly and professional papers, systematic review articles, book and symposia reviews, communications and news, and special topical issues, an international forum for the development of integrated coastal research is provided.

#### Advertising, Editorial, and Subscription Information

Advertising and Editorial Office: All advertising and editorial correspondence should be sent to Dr. Charles W. Finkl, Editor-in-Chief, Journal of Coastal Research, 7570 NW 47th Avenue, Coconut Creek, FL 33073, U.S.A. PHONE: 954-899-8416. E-MAIL: cfinkl@cerf-jcr.com

**Subscription Information**: The Journal of Coastal Research is a bimonthly publication. Calendar-year (2018) print and online subscription prices for the JCR are: \$115.00 for US CERF members / \$125.00 for International CERF members (\$95.00 for online only), and \$519.00 for US institutions / \$541.00 for International institutions (\$437.00 for online only). Additional surface charges may apply to subscribers located outside of the USA. For additional membership and subscription forms and information, please go to www.CERF-JCR.org. To obtain a membership or subscription form by mail, please send request to Journal of Coastal Research, P.O. Box 7065, Lawrence, KS 66044. Back Issues and Special Issues of the JCR, when available, can be directly purchased at www.CERF-JCR.org.

The Journal of Coastal Research is currently surveyed in Applied Science & Technology Abstracts; Applied Science & Technology Index (H.W. Wilson); Aquatic Sciences & Fisheries Abstracts; BIOBASE; Biological Abstracts; BIOSIS Previews (Thomson); CAB International Abstracts (CABI); CSA Civil Engineering Abstracts (ProQuest); Current Awareness in Biological Sciences (Elsevier); Current Contents/Agriculture, Biology, & Environmental Sciences (Thomson); Ecology Abstracts (ProQuest); Environmental Sciences & Pollution Management; GeoAbstracts [Geographical Abstracts: Physical Geography; Ecological Abstracts; Geological Abstracts; GEOBASE] (Elsevier); GeoRef; Meteorological & Geoastrophysical Abstracts (ProQuest); Oceanic Abstracts (ProQuest); Oceanographic Literature Review (Elsevier); Physical Sciences Digest (CSA, Ebsco); Pollution Abstracts (ProQuest); Referativnyi Zhurnal; Science Citation Index; SciSearch (Thomson); SCOPUS; Water Resources Abstracts (Bethesda); Zoological Record (Thomson).





### **COVER PHOTOGRAPH**



**Qingdao West Coast New Area, China.** The Qingdao West Coast New Area is located along the coast of Jiaozhou Bay, Qingdao City, China. It constitutes one of three main urban areas of Qingdao City and faces the eastern urban area from across the bay. Established in 2014, this area covers approximately 2,127 km<sup>2</sup> of land and about 5,000 km<sup>2</sup> of ocean. The main focus of the Qingdao West Coast New Area is on the development of marine economies and emerging coastal industries. (Photograph taken on 22 August 2017 by Dulong Liu, Linyi City, Shangdong Province, China.)

#### COASTAL EDUCATION AND RESEARCH FOUNDATION

7570 NW 47th Avenue Coconut Creek, FL 33073, U.S.A.

**Officers of the Foundation** 

Founded in 1983 by: Charles W. Finkl, Sr. (Deceased), Charles W. Finkl, Jnr., Rhodes W. Fairbridge (Deceased), and Maurice L. Schwartz (Deceased)

#### President &

**Executive Director:** Charles W. Finkl

**Senior Vice President & Assistant Director:** Christopher Makowski

Secretary: Heather M. Vollmer

> **Regional Vice Presidents** North America James R. Houston Victor V. Klemas Orrin H. Pilkey, Jr.

South America Vanda Claudino-Sales Omar Defeo

Oceania Charles Lemckert Anja Scheffers Vic Semeniuk Andrew D. Short

#### **Board of Directors (Trustees)**

J. Andrew G. Cooper Charles W. Finkl Duncan M. FitzGerald Gary B. Griggs James R. Houston Robert Huff Joseph T. Kelley Victor V. Klemas

Frédéric Bouchette Yong-Sik Cho Nicholas K. Coch Hany Elwany Kazimierz K. Furmanczyk Paul S. Kench Björn Kjerfve

Lindino Benedet Georges Chapalain John B. Gallagher

Western Europe Luciana Esteves Carlos Pereira da Silva Michael Phillips Marcel J.F. Stive

**Executive Assistant:** 

Barbara Russell

Eastern Europe Niki Evelpidou Kazimierz K. Furmanczyk

> Southeast Asia Hak Soo Lim Nobuo Mimura

Stephen P. Leatherman Elijah W. Ramsey, III Charles Lemckert Gonzalo C. Malvárez Christopher Makowski Carlos Pereira da Silva Michael Phillips Orrin H. Pilkey, Jr. Norbert P. Psuty

Vic Semeniuk Douglas J. Sherman Andrew D. Short Daniel J. Stanley Marcel J.F. Stive Allan Williams

Philip D. Osborne

Charles Thibault

Erik van Wellen

Ya Ping Wang

Wei Zhang

**Lifetime Members** 

Tetsuya Kusuda Stephen P. Leatherman Yoshiki Saito **Charles** Lemckert J. Paul Liu Gonzalo C. Malvárez Norberto C. Nadal-Caraballo Fatima Navas

#### **Patron Members**

Carl H. Hobbs, III

Timothy W. Kana

Norbert P. Psuty Robert S. Young

#### **CERF Society Information**

The Coastal Education and Research Foundation [CERF] is a nonprofit society dedicated to the advancement of the coastal sciences. The Foundation is devoted to the multi-disciplinary study of the complex problems of the coastal zone. The purpose of CERF is to help translate and interpret coastal issues for the public and to assist professional research and public information programs. The Foundation specifically supports and encourages field and laboratory studies on a local, national, and international basis. Through printed scientific publications, online content, and international symposiums, CERF brings accurate information to the public and coastal specialists on all aspects of coastal issues in an effort to maintain or improve the quality of shoreline resources.

Because CERF is concerned with broad environmental issues, our efforts concentrate on significant problems such as maintenance of good quality (potable) water with adequate supply, and hazards associated with potential beach erosion, flooding, and susceptibility of developed shorelines to storm surge and wave attack. By focusing attention on these potential man-made and natural hazards, it is hoped that our research efforts will help others improve the quality of life in diverse coastal areas. CERF thus aims to stimulate awareness of coastal (marine and freshwater shorelines) land and water problems; initiate and foster research and innovation to promote long-term coastal productivity; establish an educational forum for the debate of contentious coastal issues; and develop new principles and approaches for enlightened coastal management, and encourage their adoption and use.



#### $\Box$ CERF MEMBERSHIP $\Box$

Members are individuals that support the aims of the foundation through personal and group efforts or by donations. Memberships are available in different categories with privileges.

Subscription information is available online at www.cerf-jcr.org. Subscriptions office: Allen Press, Inc., P.O. Box 1897, Lawrence, KS 66044, U.S.A. CERF@allenpress.com

#### **Editor-in-Chief**

Charles W. Finkl Ph.D., CSci, CMarSci, FIMarEST, CPGS, CPSSc, PWS, M.ASCE

Dr. Charles W. Finkl is President and Executive Director of the Coastal Education and Research Foundation [CERF], publisher of the JCR. Charlie, a founding editor of the Journal of Coastal Research, has served as Editor-in-Chief for the past 34 years. He is a Research Professor in the Department of Geosciences at Florida Atlantic University in Boca Raton, Florida. He received his Bachelor and Master of Science degrees from Oregon State University and the Ph.D. from the University of Western Australia. He is a member of more than 20 professional societies and has published more than 200 professional papers, books, and reports. He is a Chartered Marine Scientist (CMarSci) [Institute of Marine Engineering, Science and Technology], Certified Professional Geological Scientist (CPGS) [American Institute of Professional Geologists (AIPG)], Certified Professional Soil Scientist (CPSSc) [American Registry of Certified Professionals in Agronomy, Crops, and Soils], and a Professional Wetland Scientist (PWS) [Society of Wetland Scientists]. Charlie has field experience in parts of the USA, Caribbean area, Brazil, Honduras, Russia, South Africa, Western Europe, Australasia, and South Pacific islands. He is also the Series Editor of the Encyclopedia of Earth Sciences Series that is published by Springer (Germany). There are more than twenty-eight volumes in the Series and about twenty-five are available online. Charlie also serves on the Editorial Board of the International Journal of Environmental Studies (Routledge) and is an occasional peer reviewer for many other professional journals.

Charlie has interests and expertise in the general areas of surficial geology, coastal and marine geomorphology (including coastal classification), coastal/marine biophysical environments, exploration geochemistry, soils and weathering (regolith geology), coastal zone management and engineering applications or impacts on natural systems (including erosion control and shore protection), coastal hydrology including submarine freshwater and mineralized seeps, subaerial and marine structural geology, natural hazard mitigation in coastal zones, marine environments and coastal wetland protection and restoration, and remote sensing (e.g., land cover classification in coastal wetlands, advection-diffusion turbidity plumes in coastal waters, delineation of bottom types and sand resources), effluent disposal and pollution of wetlands and estuaries, water resources mapping and conservation, time series studies of wetland hydroperiod and soil moisture.

#### International Coastal Symposium (ICS) **Official Meeting of CERF**

The International Coastal Symposium (ICS) was originally set up by Per Bruun (deceased) and Charlie Finkl as the official meeting of the Coastal Education and Research Foundation (CERF), with one of the first meetings being held in Hilton Head, South Carolina, in 1993. After the repeated success of these meetings, CERF moved the ICS to the international scene holding these conferences in conjunction with local sponsors in Australia, Brazil, Iceland, New Zealand, Northern Ireland, Poland, Portugal, and South Korea. The ICS brings together delegates from all over the world to collaborate and discuss the most current coastal research studies and projects. During the ICS 2014, which was held in Durban, South Africa, a grand celebration took place to mark the 30th Anniversary of CERF and the JCR. Our next ICS meeting is scheduled for April of 2020 in Seville, Spain. For more information, please visit www.cerf-jcr.org.

# **Journal of Coastal Research**

### SPECIAL ISSUE NO.84 (pages 1-180)

### SUMMER 2018

ISSN 0749-0208

## CONTENTS

Simulation of Remote-Sensed Chlorophyll Concentration with a Coupling Model Based on Numerical Method and CA-SVM in Bohai Bay, China	1
An Efficient Simulation–Optimization Approach for Controlling Seawater IntrusionYun Yang, Jianfeng Wu, Jin Lin, Jinguo Wang, Zhifang Zhou, and Jichun Wu	10
The Response of Bacterial Community Structure to Ecological Environment Changes in Daya Bay between Winter and SpringJing-Bin Feng, Chun-Hua Ren, Peng Luo, Yan Yan, Xiao Jiang, and Chao-Qun Hu	19
Study on Ship-Borne GNSS-R Delay-Doppler Map for Oil Spill DetectionXueyuan Zhu, Ying Li, Peng Liu, Bingxin Liu, and Yonghu Yang	30
The Orthogonal Reference Method for In-Situ Analysis of Ammonia Nitrogen Content in SeawaterRan Ma, Ze-Xiao Xie, Shu-Wei Zhang, Dong-Zhi Chu, Xuan Cao, Ning Wu, and Yan Liu	36
Study on Optimization of Sea Ice Concentration with Adjoint Method	44
Genetic Diversity of Active Ammonia Oxidizing Archaea and Variation during Macrobenthic Bioremediation in Mudflats of Sansha Bay, China	51
Characterization of Wind-Sea and Swell in the South China Sea based on HY-2 Satellite DataShuiqing Li, Fan Bi, Yijun Hou, and Hongwei Yang	58
An Experimental Study of Galvanic Corrosion on an Underwater Weld JointXiangfeng Kong, Jing Lv, Nan Gao, Xin Peng, and Jing Zhang	63
Vertical Variations in Bacterial Community Composition and Environmental Factors in the Culture Pond Sediment of Sea Cucumber Apostichopus Japonicus	69
Influence of Dispersant/Oil Ratio on the Bacterial Community Structure and Petroleum Hydrocarbon Biodegradation in Seawater 	77
Hydrologic Impact of Urbanization on Catchment and River System Downstream from Taihu LakeYuqin Gao, Huaizhi Wang, Xiaohua Lu, Youpeng Xu, Zhenxin Zhang, and Arthur R. Schmidt	82
Optimal Allocation Model of Water Resources in Tidal Flat Development of Coastal AreasXianfeng Huang, Yingqin Chen, and Guohua Fang	89
Spatio-Temporal Changes in Potential Evaporation and Possible Causes Based on SCRAQ Method: A Case Study in the Wei River Basin, ChinaBo Kong, Shengzhi Huang, Lan Ma, and Qiang Huang	94
Comparing the Environmental Effects of Terrestrial and Offshore Airports: The Case of Dalian City, ChinaQiang Fu, Nuo Wang, Wan-Ni Lin, and Nuan Wu	103
Assessing the Distribution Characteristics of Surface Water Geochemistry and Pollution of Heavy Metals within Soil in the Changjiang River Delta, ChinaJizhou Li, Yinxian Song, Changping Mao, and Tianyuan Li	109
Processing of Turbulent Data and Flux Quality Control of Observed Data from Yongxing Island in Spring 2016 Feng-Hua Zhou, Rong-Wang Zhang, Rui Shi, Ju Chen, Yun-Kai He, and Qiang Xie	114
Distribution and Potential Ecological Risk Assessment of Heavy Metals in Surface Sediments of Xiamen Bay 	125
Spatiotemporal Changes in Extreme Wet and Dry Conditions and Linkages with Planetary Oscillations 	134
Trade-off Analysis for Marine Recreation Activities Management along the Tainan Gold Coast	144
Temporal and Spatial Distributions of Water and Sediment Yield in the Luanhe River Basin, ChinaYing Li, Sui-Liang Huang, and Joseph Domagalski	149
Estimating Sediment Moving into the Yellow River Based on Moving Process AnalysisJinliang Zhang	163
Investigation and Evaluation of the Ecological and Geological Environment Quality of High-Efficiency Ecological Economic Zone (HEEEZ) Coastal Regions within the Yellow River Delta	169