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Saltmarsh biogeomorphology across scales: implications for conservation, habitat restoration and ecosystem services delivery

Clementine Chirol

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CORE 2021

Nanjing, China



International Association
for Hydro-Environment
Engineering and Research

Supported by
Spain Water and IWHR, China



International Symposium on COastal Resources and Environment (CORE)

Themed on:
Coastal Biogeomorphology and Nature-Based Solutions

Oct. 12 -16, 2021
Nanjing, China



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TOWNEND, Ian, University of Southampton, UK
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Members:

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YE, Shufeng, East China Sea Bureau of Ministry of Natural Resources, China
YOU, Zaijin, Dalian Maritime University, China
YU, Xiping, South University of Science and Technology of China, China
ZHANG, Yihui, Xiamen University, China
ZHENG, Jinhai, Hohai University, China
ZHOU, Zeng, Hohai University, China
ZOU, Xinqing, Nanjing University, China

Introduction and aim of CORE

While coastal resources and environment are highly valuable for mankind, over the past century they have been under increasing pressure of global change (e.g., sea level rise, anthropogenic activities and increasing frequency of extreme climate). The general aim of the symposium on **Coastal Resources and Environment (CORE)** is to establish a platform for international and domestic scholars to exchange ideas, to share cutting–edge research, to promote potential collaboration, to co–cultivate students and young researchers, and hence advance this field of the scientific knowledge and practical management know–how.

Following two successful CORE events in 2017 and 2018, CORE2021, themed on Coastal Biogeomorphology and Nature–based Solutions, is held during 12–15 October, 2021 in Nanjing, China. Due to the uncertainty of COVID–19 pandemic, the symposium will be also held online for guests who cannot travel to Nanjing.

CORE2021 is jointly hosted by Hohai University (China), University of Edinburgh (UK), Sun Yat–Sen University (China) and Trinity College Dublin (Ireland). The symposium is supported by the International Association of Hydro–Environment Engineering and Research (IAHR) which is one of the leading international organizations of engineers and professionals in fields related to the water environment.

The symposium is locally organized by the State Key Laboratory of Hydrology–Water Resource and Hydraulic Engineering, the Jiangsu Key Laboratory of Coast Ocean Resources Development and Environment Security, Overseas Expertise Introduction Center for Discipline Innovation on Coastal Resources Exploitation and Security, and Jiangsu Society of Oceanology and Limnology.

Two special issues (SI) have been organized in name of CORE2021: One SI on "Coastal Biogeomorphology" in *Frontiers in Marine Science* and the other SI on "Estuarine and Coastal Processes and Geomorphology" in *Water Science and Engineering*.

For more details, please visit the conference website: <http://core2021.iahr.org/>

For the online live synchronous video broadcasting of keynote presentations, please visit the website: https://www.iahr.org/en/lives/details?live_id=91

Organization Committee

Co-chairs:

ZHOU, Zeng, Hohai University, China
MUDD, Simon, University of Edinburgh, UK
HU, Zhan, Sun Yat-Sen University, China
MÖLLER, Iris, Trinity College Dublin, Ireland
GONG, Zheng, Hohai University, China

Members:

CHEN, Yongping, Hohai University, China
JIN, Chuang, Hohai University, China
FENG, Xi, Hohai University, China
LI, Huan, Hohai University, China
SHEN, Chengji, Hohai University, China
SU, Min, Hohai University, China
XIE, Dongmei, Hohai University, China
YAO, Peng, Hohai University, China
ZHANG, Heyue, Hohai University, China
ZHANG, Qian, Hohai University, China
ZHANG, Rong, Hohai University, China
CAI, Jindong, IAHR Beijing Office, China
LU, Wenjing, IAHR Beijing Office, China
SUN, Gaohu, IAHR Beijing Office, China

Volunteers of Hohai University:

CHEN Lei, CHEN Maofei, CHEN Xue, DONG Chuning, FU Saiqian, GE Ran, GU Yuxian, HANG Juncheng, HUO Hong, JIANG Chunhai, KONG Mengjie, LI Yiwei, LIANG Mengjiao, LIN Mingze, LIU Qian, LUO Guangsheng, MA Bowen, PAN Hao, WANG Jingyuan, WEI Jiabin, WEI Yizhang, WU Yiming, XUE Shilei, YU Zhibin, ZHANG Gang, ZHANG Kaili, ZHANG Rongcheng, ZHANG Wei, ZHANG Xiaotian, ZHAO Kun, ZHONG Huanyu, ZHOU Yudi.

Meeting Location

The conference will be organized at the Hohai International Conference Centre Hotel (in Chinese: 河海大学国际会议中心酒店, 也称隽恒酒店).

Address: 1 Xikang Rd, Gulou, Nanjing, Jiangsu Province, China
(in Chinese: 江苏省南京市鼓楼区西康路1号).

Tel: +86 25 8339 3333

The conference meeting rooms are located at the 3rd floor (会议场地为3楼).



Useful information for international guests

Travel to Nanjing: There is an international airport in Nanjing, which could be one of the easiest options for international guests. However, if you arrive at Shanghai Pudong Airport, you can use No.2 Subway (transit at Guanganlu station, ~2.0hr, 8RMB) or Maglev and Subway (transit at Longyang station, ~1.5hr, ~60RMB) or directly take a taxi (~1hr, ~200RMB) to Shanghai Hongqiao Railway station, and then take a high speed train (1.5hr~2.0hr, ~140RMB for 2nd-class ticket and ~220RMB for 1st-class ticket) to Nanjing. There are two train stations in Nanjing, including the Nanjing Station and the Nanjing South Railway Station. Please bear in mind the service of high speed train to Nanjing at Shanghai Hongqiao Railway Station starts from 6:20 am in the morning and ends at 9:33 pm in the evening.

Get to Hohai International Conference Center Hotel: Depending on the time of arrival (e.g., during working hours), we will try to arrange our assisting team to pick you up at the Nanjing train stations (Nanjing Station or Nanjing South Railway Station) or Nanjing Lukou airport. From Nanjing airport, taking a taxi (~1hr, ~130RMB) to Hotel will be the easiest option. From Nanjing South Railway Station, taking a taxi to the hotel takes around 30-40min (~40RMB). From Nanjing Station, taking a taxi to the hotel takes around 20-30 min (~20-30RMB).

Overall Schedule of CORE2021

12 OCT Tuesday	Arrival and registration <ul style="list-style-type: none"> • Guests arrive, pick-up arrangement at train stations and Lukou international airport • Check in and register at hotel • Welcome buffet at 18:00–20:30: Hohai International Conference Centre (HICC)
13 OCT Wednesday	Morning <ul style="list-style-type: none"> • Opening ceremony starts at 8:30 • 4 invited keynote presentations (40 minutes each): <ul style="list-style-type: none"> ◦ Prof. Xiping YU, South University of Science and Technology of China ◦ Prof. Heidi NEPF, Massachusetts Institute of Technology, USA ◦ Prof. Hongwei FANG, Tsinghua University, China ◦ Prof. Karin BRYAN, University of Waikato, New Zealand • Lunch break at HICC between 12:00–14:00 Afternoon <ul style="list-style-type: none"> • 4 parallel sessions (roughly 12 presentations each) • Dinner between 18:00–20:30 <p><small>*note: posters can be introduced during coffee breaks</small></p>
14 OCT Thursday	Morning <ul style="list-style-type: none"> • 3 parallel sessions (roughly 12 presentations each) • Lunch break at HICC between 12:00–14:00 Afternoon <ul style="list-style-type: none"> • 6 invited keynote presentations (40 minutes each): <ul style="list-style-type: none"> ◦ Prof. Tjeerd BOUMA, Royal Netherlands Institute for Sea Research ◦ Prof. Houjie WANG, Ocean University of China, China ◦ Dr. Clementine CHIROL, University of Lorraine, France ◦ Prof. Qing HE, East China Normal University, China ◦ Prof. Stijn TEMMERMAN, University of Antwerp, Belgium ◦ Prof. Colin WOODROFFE, University of Wollongong, Australia • Dinner and closing ceremony between 18:20–21:00, announce excellent presentation/poster awards, introduce the next CORE organizers <p><small>*note: posters can be introduced during coffee breaks</small></p>
15 OCT Friday	Departure <ul style="list-style-type: none"> • Guests check out hotel and leave Nanjing • Some guests may stay longer depending on individual plans

Detailed Schedule

DAY 1: OCTOBER 13, WEDNESDAY		
13 Oct (Morning): Opening and Keynote Presentations		
		Location: Juanheng Hall (隽恒厅); ZOOM ID: 827 7191 7816 Password: 492389 https://www.iahr.org/en/lives/details?live_id=91
Time	Arrangement	Chair
Opening of CORE2021		
8:30–8:40	Welcome Speech from IAHR President: Prof. Joseph Hun-wei LEE	Zheng GONG
8:40–8:50	Welcome Speech from Vice-President of Hohai University: Prof. Weiya XU	
8:50–9:00	Group photo	
Invited keynote presentations		
9:00–9:40	Impact of Climate Change on Tropical Cyclone Activities Xiping YU , Southern University of Science and Technology, China	Zeng ZHOU
9:40–10:20	Impact of Coastal Vegetation on Wave Damping and Sediment Resuspension Heidi NEPF , Massachusetts Institute of Technology (United States, 21:40–22:20, 12 Oct)	
10:20–10:40	Coffee/Tea break, and poster discussion	
10:40–11:20	Mechanics of Biofilm Coated Sediment Transport Hongwei FANG , Tsinghua University, China	Zhan HU
11:20–12:00	Issues of Scale and the role of Mangroves in shaping Coastal Processes Karin BRYAN , University of Waikato (New Zealand, 16:20–17:00)	
12:00–14:00	Lunch break (Yishang western restaurant, 一楼貽尚西餐厅)	

13 Oct (Afternoon): 4 parallel sessions

Session 1: Estuarine and coastal hydrodynamics and bio-morphodynamics (Topic 1)
Location: Yuxi Hall (玉犀厅); **ZOOM ID:** 838 0223 7391; **Password:** 743495

Time	Arrangement	Chair
14:00–14:15	Wave effect on dynamics of the estuarine turbidity maximum in an idealized convergent partially mixed estuary	Guoxiang WU, Qin ZHU
	Wenping GONG , Sun Yat-sen University, China	
14:15–14:30	Effects of fluvial and marine forcing on the expansion of <i>Spartina alterniflora</i> at the Yellow River Estuary, China	
	Dongdong SHAO , Beijing Normal University, China	
14:30–14:45	Exploratory Modeling on the Height of Marsh-Edge Cliffs	
	Yunwei WANG , Hohai University, China	
14:45–15:00	Plant traits determining biogeomorphic landscape dynamics: a study on clonal expansion strategies driving cliff formation at marsh edges	
	Haobing CAO , East China Normal University, China	
15:00–15:15	Toward automated topographic tools to assess vertical and horizontal components of resilience in salt marshes	
	Guillaume GOODWIN , University of Padova (Italy, 9:00–9:15)	
15:15–15:30	Salt-marsh vulnerability and halophytic vegetation vertical migration in response to sea level rise: inferences from the Venice Lagoon	
	Zhicheng YANG , University of Padova (Italy, 9:15–9:30)	
15:30–16:00	Coffee/Tea break, and poster discussion	
16:00–16:15	A new approach for modelling long-term morphological development in tidal basins	
	Zheng Bing WANG , Delft University of Technology (Netherlands, 10:00–10:15)	
16:15–16:30	Modeling the influences of large-scale embankment on the bar development in the Qiantang Estuary	
	Dongfeng XIE , Zhejiang Institute of Hydraulics and Estuary, China	
16:30–16:45	Impacts of tidal flat embankments on estuarine morphodynamics	
	Leicheng GUO , East China Normal University, China	
16:45–17:00	Experimental study on morphological change of reef islands under regular waves	
	Xianjin CHEN , Changsha University of Science and Technology, China	
17:00–17:15	A Lagrangian-based Floating Macroalgal Growth and Drift Model (FMGDM v1.0): application to the Yellow Sea green tide	
	Fucang ZHOU , East China Normal University, China	
17:15–17:30	Analysis of exchange flow in coastal lagoons subjected to differential tidal forcing through two tidal inlets	
	Dimitrios Mastoris-Kourmpanis , University of Patras (Greece, 12:15–12:30)	
18:00–20:00	Welcome dinner (Zi-jin restaurant, 三楼紫金厅)	

13 Oct (Afternoon): 4 parallel sessions

Session 2: Sediment dynamics involving biological effects (Topic 2) & Data acquisition and monitoring techniques (Topic 3)
Location: Hupo Hall (琥珀厅); **ZOOM ID:** 861 0789 2073; **Password:** 186045

Time	Arrangement	Chair
14:00–14:15	Estimating Waves and Currents at the Saltmarsh Edge Using ADV Data	Qiang HE, Zhenchang ZHU
	Yining CHEN , Second Institute of Oceanography, MNR, China	
14:15–14:30	Fairy circles imply high resilience of self-organized salt marshes	
	Lixia ZHAO , East China Normal University, China	
14:30–14:45	Scale-dependent biogeomorphic feedbacks control the tidal marsh evolution under <i>Spartina alterniflora</i> invasion	
	Dawei WANG , Beijing Normal University, China	
14:45–15:00	Flow division ratio of bifurcated Jiaomen outlet in the Pearl River Delta based on flume experiment	
	Zhibin YU , Hohai University, China	
15:00–15:15	Using satellite-derived optical properties to estimate the benthic primary production in sediment rich shallow intertidal estuary (Ōhiwa, New Zealand)	
	Zhanchao SHAO , University of Waikato (New Zealand, 20:15–20:30)	
15:15–15:30	Thermal stress affects bioturbation process: mesocosm experiments on common cockles (<i>Cerastoderma edule</i>)	
	Zhengquan ZHOU , Royal Netherlands Institute for Sea Research (Netherlands, 9:15–9:30)	
15:30–16:00	Coffee/Tea break, and poster discussion	
16:00–16:15	Sediment suspension over sand-silt mixtures under unidirectional current	
	Peng YAO , Hohai University, China	
16:15–16:30	Remote sensing of intertidal morphological change in Tiaozini of Jiangsu coast from 2012 to 2021	
	Yanyan KANG , Hohai University, China	
16:30–16:45	Modelling the effect of temperature and exposure on intertidal channel networks in cohesive coastal environments	
	Hieu NGUYEN , University of Waikato (New Zealand, 21:45–22:00)	
16:45–17:00	Sediment bulk density effects on benthic macrofauna burrowing and bioturbation behavior	
	Lauren WIESEBRON , Royal Netherlands Institute for Sea Research (Netherlands, 10:45–11:00)	
17:00–17:15	Biofilms as the architect: the microbiological mediation of intertidal sediment behavior	
	Xindi CHEN , Tsinghua University, China	
17:15–17:30	Responses of mangrove forests to sea-level rise and human interventions: a bio-morphodynamic modelling study	
	Danghan XIE , Utrecht University (Netherlands, 11:15–11:30)	
18:00–20:00	Welcome dinner (Zi-jin restaurant, 三楼紫金厅)	

13 Oct (Afternoon): 4 parallel sessions

Session 3: Estuarine and coastal species competition and co-existence (Topic 4) & Coastal management and nature-based solutions (Topic 5)
Location: Juanshang Hall (隽尚厅); ZOOM ID: 853 2018 9112; Password: 647878

Time	Arrangement	Chair
14:00–14:15	Temporal and spatial comparison of food web structure in marine pastures in the Pearl River Estuary: implications for sustainable fisheries management	Leicheng GUO, Min SU
	Peng XU , South China Sea Institute of Oceanology, Chinese Academy of Sciences, China	
14:15–14:30	Effects of coastal vegetation belt on wave attenuation for waves with different conditions	
	Jun TANG , Dalian University of Technology, China	
14:30–14:45	Overtopping dynamics under extreme conditions and ecological protection of levees	
	Yi PAN , Hohai University, China	
14:45–15:00	The morphological evolution of tidal creeks shifts the structural and functional diversity of benthic bacterial community	
	Ran GE , Hohai University, China	
15:00–15:15	Understanding the resilience of salt marshes under disturbances through the lens of individual seedlings	
	Zhiyuan ZHAO , Royal Netherlands Institute for Sea Research (Netherlands, 9:00–9:15)	
15:15–15:30	Competing needs of salt-marsh accretion and coastal flooding protection	
	Davide TOGNIN , University of Padova (Italy, 9:15–9:30)	
15:30–16:00	Coffee/Tea break, and poster discussion	
16:00–16:15	Species competition and dispersal drive salt marsh ecomorphodynamics: a modelling study	Dongdong SHAO, Yi PAN
	Alvise FINOTELLO , Ca Foscari University of Venice (Italy, 10:00–10:15)	
16:15–16:30	Soil Organic Matter in salt-marsh soils: a case study from the Venice Lagoon (Italy)	
	Alice PUPPIN , University of Padova, (Italy, 10:15–10:30)	
16:30–16:45	Experimental investigations of the retention time of floating particles through an array of emerging cylinders	
	Wei SHI , University of Padova, (Italy, 10:30–10:45)	
16:45–17:00	Effects of interactions between macroalgae and seagrass on the distribution of macrobenthic invertebrate communities at the Yellow River Estuary, China	
	Xinyan WANG , Beijing Normal University, China	
17:00–17:15	Modelling the role of co-existence vegetation cover on the morphological evolution	
	Yizhang WEI , Hohai University, China	
17:15–17:30	Environmental predictors of crab burrow distribution in a tidal flat-marsh system	
	Xue CHEN , Hohai University, China	
18:00–20:00	Welcome dinner (Zi-jin restaurant, 三楼紫金厅)	

13 Oct (Afternoon): 4 parallel sessions

Session 4: Coastal management and natural-based solutions (Topic 5)
Location: Bojue Hall (铂珺厅); ZOOM ID: 811 6069 6604; Password: 649595

Time	Arrangement	Chair
14:00–14:15	Windows of opportunity for salt marsh restoration exists in the face of rising sea level	Peng YAO, Xindi CHEN
	Man QI , Central China Normal University, China	
14:15–14:30	Effects of density contrast on pore-water flow and solute transport in salt marshes	
	Chengji SHEN , Hohai University, China	
14:30–14:45	Effects of wave nonlinearity on submerged flexible vegetation dynamics and wave attenuation	
	Kai YIN , Southeast University, China	
14:45–15:00	Interannual variabilities, long-term trends, and regulating factors of hypoxia in the eastern waters of Pearl River Estuary	
	Zheng CHEN , Sun Yat-sen University, China	
15:00–15:15	Effect of pollutant control in coastal areas of the Laizhou Bay in recent ten years	
	Chang LI , Nanjing Hydraulic Research Institute, China	
15:15–15:30	Experimental and Numerical Modeling of Overhanging Riverbank Stability	
	Kaili ZHANG , Hohai University, China	
15:30–16:00	Coffee/Tea break, and poster discussion	
16:00–16:15	What difference does a decade make? Limited restoration 10 – 15 years after mangrove clearing: a New Zealand case study	Wenping GONG, Xi FENG
	Debra STOKES , Southern Cross University (Australia, 19:00–19:15)	
16:15–16:30	Incorporating green infrastructure into coastal flood defense: historic lessons and future potentials	
	Zhenchang ZHU , Guangdong University of Technology, China	
16:30–16:45	Hydro-sediment-morphodynamic modelling of overtopping-induced levee-breaching process and the consequent flooding propagation	
	Aofei JI , Zhejiang University, China	
16:45–17:00	How hydrological connectivity regulates the plant recovery process in salt marshes	
	Qing WANG , Beijing Normal University, China	
17:00–17:15	Human-induced changes on sedimentary environment in a macro-tidal estuary	
	Zhixin CHENG , Dalian Maritime University, China	
17:15–17:30	The maintenance mechanisms of summer hypoxia under eutrophication effect in Shiziyang bay, the upper reaches of the Pearl River Estuary	
	Yiping LAI , Sun Yat-Sen University, China	
18:00–20:00	Welcome dinner (Zi-jin restaurant, 三楼紫金厅)	

DAY 2: OCTOBER 14, THURSDAY

14 Oct (Morning): 3 parallel sessions

Session 1: Estuarine and coastal hydrodynamics and bio-morphodynamics (Topic 1)
Location: Yuxi Hall (玉犀厅); ZOOM ID: 867 1182 0194; Password: 541874

Time	Arrangement	Chair	
8:30–8:45	Development of a practical model for salt marsh evolution under human activities	Jianzhong GE, Jun TANG	
	Guoxiang WU , Ocean University of China, China		
8:45–9:00	Impact of off-bottom seaweed cultivation on turbulent variation in the hydrodynamic environment		
	Qin ZHU , Southern Marine Science and Engineering Guangdong Laboratory (Guangzhou)		
9:00–9:15	Mechanisms of pond expansion in a rapidly submerging marsh		
	Joshua HIMMELSTEIN , University of North Carolina at Chapel Hill (United States, 20:00–20:15, 13 Oct)		
9:15–9:30	A parametric approach to bank collapse		
	Kun ZHAO , Hohai University, China		
9:30–9:45	Analysis of wave dissipation and drag coefficient of vegetation based on genetic programming algorithm		
	Weifeng YE , Sun Yat-sen University, China		
9:45–10:00	Intertwined eco-morphodynamic evolution of salt marshes and tidal channels cutting through them		
	Liang GENG , Hohai University, China		
10:00–10:30	Coffee/Tea break, and poster discussion		
10:40–10:45	Development of a vegetation-flow-wave-sediment coupled model and its application to Chongming Dongtan		Dongfeng XIE, Chengji SHEN
	Jianzhong GE , East China Normal University, China		
10:45–11:00	Tidal Asymmetry Dominated by the Upper Flat in Shallow Well-mixed Estuaries		
	Qian YU , Nanjing University, China		
11:00–11:15	Unrevealed singular lines contain more complexity: a revisit of the unified framework for stability of river bifurcations		
	Weilun GAO , Beijing Normal University, China		
11:15–11:30	Estimating the hypsometry of estuaries by using satellite derived bathymetry techniques		
	Wagner COSTA , University of Waikato (New Zealand, 16:15–16:30)		
11:30–11:45	Benthic boundary layer dynamics in an energetic, mud-rich coastal sea		
	Junbiao TU , Tongji University, China		
12:00–14:00	Lunch break (Yishang western restaurant, 一楼贻尚西餐厅)		

14 Oct (Morning): 3 parallel sessions

Session 2: Sediment dynamics involving biological effects (Topic 2) & Data acquisition and monitoring techniques (Topic 3)
Location: Hupo Hall (琥珀厅); ZOOM ID: 852 8816 7878; Password: 421061

Time	Arrangement	Chair	
8:30–8:45	Turbulence-based models to assess sediment transport on vegetated coasts	Jianhua, GAO, Liqin ZUO	
	Rafael TINOCO , University of Illinois At Urbana Champaign (United States, 19:30–19:45, 13 Oct)		
8:45–9:00	Mudflat biostabilization reduces coastal landscape connectivity and ecosystem function		
	Kendall VALENTINE , Virginia Institute of Marine Science (United States, 20:45–21:00, 13 Oct)		
9:00–9:15	Movement of mudsnails affects population dynamics and landscape heterogeneity in tidal flat ecosystems		
	Heyue ZHANG , Hohai University, China		
9:15–9:30	Experimental Investigations of regular wave erosion and deposition under the protection of flexible vegetation on a beach		
	Shangpeng GONG , Southeast University, China		
9:30–9:45	An in-situ device to measure the critical shear stress for sediment erosion on intertidal mudflats		
	Qian ZHANG , Hohai University, China		
9:45–10:00	Video monitoring of wave overwash on an artificial beach		
	Zhubin CAO , Hohai University, China		
10:00–10:30	Coffee/Tea break, and poster discussion		
10:30–10:45	Plant species classification in salt marshes using phenological parameters derived from Sentinel-2 pixel-differential time-series		Yining CHEN, Huan LI
	Chao SUN , Ningbo University, China		
10:45–11:00	A Numerical Study on Vortex Dynamics Over Wave-generated Ripples		
	Chuang JIN , Hohai University, China		
11:00–11:15	Self-organization of salt marsh patches on mudflats: Field evidence using the UAV technique		
	Weiqi DAI , Yellow River Institute of Hydraulic Research, China		
11:15–11:30	Tidal river extraction from sentinel-2A/B MSI images using an adaptive multi-scale region growth method		
	Song JIN , Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, China		
11:30–11:45	Monitoring of tidal flats stability in the central coast of Jiangsu Province based on time-series remote sensing images		
	Bingxue ZHAO , Nanjing University, China		
12:00–14:00	Lunch break (Yishang western restaurant, 一楼贻尚西餐厅)		

14 Oct (Morning): 3 parallel sessions

Session 3: Coastal management and natural-based solutions (Topic 5) and Coastal Carbon Dynamics (Topic 6)
Location: Juanshang Hall (隽尚厅); ZOOM ID: 835 1609 3676; Password: 253389

Time	Arrangement	Chair
8:30–8:45	Spatio-temporal patterns and mechanisms of carbon storage and sequestration in mangrove forests in China (Online)	Min ZHANG, Chuang JIN
	Luzhen CHEN , Xiamen University, China (Online)	
8:45–9:00	Upland greening compensates for wetland browning in aboveground coastal carbon change	
	Yaping CHEN , Virginia Institute of Marine Science (United States, 20:45–21:00)	
9:00–9:15	Radiative cooling effect of coastal salt marsh promoted by <i>Spartina alterniflora</i> invasion	
	Yanhong Dong , Institute of Soil Science, Chinese Academy of Science, China	
9:15–9:30	Nitrogen removal by eutrophic coastal wetlands accomplished with CH ₄ emission reduction	
	Xuechu CHEN , East China Normal University, China	
9:30–9:45	Numerical study on the water age variability over 150 years in Tokyo Bay	
	Yulong WANG , University of Tokyo, Japan	
9:45–10:00	Evaluating direct and strategic placement of dredged material for marsh restoration	
	Giulio MARIOTTI , Louisiana State University (United States, 20:45–21:00, 13 Oct)	
10:00–10:30	Coffee/Tea break, and poster discussion	
10:40–10:45	Coastal protection using building with nature concept: a case study from Chongming Dongtan Shoal, China	
	Min ZHANG , Shanghai Normal University, China	
10:45–11:00	Heavy metal pollution in coastal wetlands: A systematic review of studies globally over the past three decades (Online)	
	Chunming LI , Fudan University, China	
11:00–11:15	Discussion on the spur dike removal in the Oujiang Estuary	
	Liqin ZUO , Nanjing Hydraulic Research Institute, China	
11:15–11:30	A pressure–state–response–metrics framework to support estuary restoration	
	Shari GALLOP , University of Waikato (New Zealand, 16:15–16:30)	
11:30–11:45	The wave attenuation effect of Nature-based flood defenses at East Chongming Shore, China	
	Jie MI , Shanghai Normal University, China	
11:45–12:00	Modelling the Impact of <i>Spartina Alterniflora</i> Removal on the Morphological Evolution of Coastal Tidal Flats	
	Yuxian GU , Hohai University, China	
12:00–14:00	Lunch break (Yishang western restaurant, 一楼隽尚西餐厅)	

14 Oct (Afternoon): 6 Keynote Presentations



Location: Juanheng Hall (隽恒厅);
ZOOM ID: 869 5663 7513
Password: 957886
https://www.iahr.org/en/lives/details?live_id=91

Time	Arrangement	Chair
14:00–14:40	Managing ecosystems in times of climate change: challenges & opportunities for Nature-based flood defense	Simon MUDD
	Tjeerd BOUMA , Royal Netherlands Institute for Sea Research (Netherlands, 8:00–8:40)	
14:40–15:20	Wind-induced modulation of shelf sediment dynamics	
	Houjie WANG , Ocean University of China, China	
15:20–16:00	Saltmarsh biogeomorphology across scales: implications for conservation, habitat restoration and ecosystem services delivery	
	Clementine CHIROL , University of Lorraine (France, 9:20–10:00)	
16:00–16:20	Coffee/Tea break, and poster discussion	
16:20–17:00	Change and Response: Case Study of Sediment Transport in the Yangtze Estuary	Iris MÖLLER
	Qing HE , East China Normal University, China	
17:00–17:40	Forecasting coastal marsh evolution under global change: examples of bio-geomorphological modelling approaches	
	Stijn TEMMERMAN , University of Antwerp (Belgium, 11:00–11:40)	
17:40–18:20	Coastal response to sea-level rise: a biogeomorphological perspective	
	Colin WOODROFFE , University of Wollongong (Australia, 20:40–21:20)	
18:20–21:00	Dinner and closing ceremony (Zi-jin Hall, 三楼紫金厅) <ul style="list-style-type: none"> • Closing remarks on CORE2021 • Announcement of Excellent Presentations/Posters Awards • Introduction of the next CORE organizers 	

Title of Posters

No.	Arrangement
1	Sediment dynamic changes induced by the presence of dyke in a Scirpus saltmarsh Bing LIU , Second Institute of Oceanography, MNR, China
2	Modelling study on estuarine circulation and its effect on turbidity maximum zone in the Yalu River Estuary, China Gang YANG , University of New South Wales, Australia
3	The impact of typhoon “Fireworks” on tide dynamics, temperature and salinity in Qiantang River estuary Yuanping YANG , Zhejiang Institute of Hydraulics and Estuary, China
4	Seasonal variations of near-bed suspended sediment transport and associated with impacts of vegetation in inter-tidal flat Aijun WANG , Third Institute of Oceanography, Ministry of Natural Resources, China
5	Trajectory of coastal wetland vegetation in Xiangshan Bay, China, from image time series Yongchao LIU , Ningbo University, China
6	Analysis on temporal and spatial variation characteristics of erosion and deposition in the front edge of salt marsh wetland Wenjin ZHU , Jiangsu Ocean University, China
7	Modeling the rhythmic morphological features of saltmarsh-edge cliffs Lei CHEN , Hohai University, China
8	Remote sensing monitoring method of variable tidal flat terrain based on deep learning Jinyan HE , Hohai University, China
9	Nature-based Coastal Restoration of Yancheng Natural World Heritage Site Hongyou YUAN , Yellow Sea Wetland Research Institute, China
10	Study on geomorphic evolution process and influence mechanism of Jiuduansha Wetland in the Yangtze River Estuary Guodong HU , Changjiang River Estuary Bureau of Hydrology and Water Resources Survey, China
11	Depositional and erosional behaviour of muddy sediments across aquatic environments Juliet ROUNCE , Trinity College Dublin, Ireland
12	Advances in the effect of zoobenthos on coastal sediment movement Jiixin WEI , Hohai University, China
13	Analyze on temporal and spatial variation characteristics of erosion and deposition in the front edge of salt marsh wetland Xue LI , Jiangsu Ocean University, China
14	Study on geomorphic evolution process and influence mechanism of Jiuduansha Wetland in the Yangtze River Estuary Dean WU , Hohai University, China

Introduction to Keynote Speakers

Prof. BOUMA, Tjeerd, Royal Netherlands Institute for Sea Research (NIOZ), Netherlands

Tjeerd J. Bouma works as a scientist at the Royal Netherlands Institute of Sea Research (NIOZ Yerseke; former NIOO-CEME) and Utrecht University. During the last 15 years, he has studied tidal ecosystems around the globe, including SE-Asia and China. His work is focussed on bio-physical interactions between the forces originating from tidal currents and waves, and species that alter these forces and thereby the environment: so called ecosystem engineers. Tjeerd has a strong interest in crossing the border between fundamental and applied research, as understanding how the system works provides the best base for society to sustainable benefit from these valuable ecosystems.



Prof. BRYAN Karin, University of Waikato, New Zealand

Karin Bryan is a professor of coastal processes at the University of Waikato in Hamilton, New Zealand. Her PhD was in physical oceanography from Dalhousie University in Canada, working on bar-trapped edge waves on beaches. She helped to establish the Cam-Era video monitoring network, which became the basis of a number of research projects, tracking shoreline change, rip-currents, ebb-tidal deltas and run-up characteristics on beaches. In recent years, she began to work more in estuaries, mangroves, tidal asymmetry and sediment transport. Her latest projects are on assessing blue carbon dynamics and using models to assess future morphology of low-lying coastal areas. She is the current director of the Environmental Research Institute, and soon to be the new Dean of the School of Graduate Studies at Waikato.



Dr. CHIROL, Clementine, University of Lorraine, France

Dr Clementine Chirol is a geomorphologist and geodata analyst focusing on coastal and terrestrial vegetated systems, notably saltmarshes. She obtained her PhD degree at University of Southampton and later joined Queen Mary University of London as a Postdoc. Recently, she moved to University of Lorraine as a researcher. She uses different remote sensing techniques at the subcentimeter to the landscape scale to visualize soil and sediment structures, assess their impact on ecosystem functioning, and to provide advice in habitat restoration, ecosystem services delivery and land planning.



Introduction to Keynote Speakers

Prof. FANG, Hongwei, Tsinghua University, China



Dr. Fang is a professor of Tsinghua University. His research group focuses on the modeling of flow and sediment transport, environmental sediment dynamics, hydro-ecological effects, water conservancy information, and disaster prevention etc. He has extensive research outcome and was awarded the title of China National Funds for Distinguished Young Scientists. He is now serving as the Chief Editor of International Journal of Sediment Research, and Associate Editor of Journal of Hydraulic Engineering – ASCE. He works on Computational Fluid Dynamics and River Mechanics, Coastal and Estuary Engineering, Environmental and Ecology Assessment.

Prof. HE, Qing, East China Normal University, China



Qing He, professor of East China Normal University, director of State Key Laboratory of Estuarine and Coastal Research. She was the Principal Investigator of multiple national and international projects, and largely contributed to the developed a high-resolution fluid-sediment observation system in the bottom boundary layer, and identified the transformation of sediment sources and sinks and the associated controlling mechanism in the Deep-Water Navigation Channel Projects of the Yangtze Estuary. Her research achievements also consist of revealing the mechanism of physical-biological process interaction of fine sediment flocculation, and discovering the delayed response of morphological evolution to the reduction of sediments in the watershed. She is also member of INTERCOH Steering Committee, and deputy president of the estuary committee of the Chinese Water Resources Society.

Prof. NEPF, Heidi, Massachusetts Institute of Technology, USA



Heidi Nepf is the Donald and Martha Harleman Professor of Civil and Environmental Engineering at the Massachusetts Institute of Technology (MIT). She received a doctorate from Stanford University (1992) and began her career at MIT in 1993. She is internationally known for her work on the impact of vegetation on currents, waves, and sediment transport in channels, wetlands, and coastal zones. The Nepf Lab develops models for the physical processes that determine how vegetated habitats, such as seagrasses, marshes, and mangroves, provide coastal protection, impact landscape stability, improve water quality, and provide blue carbon reservoirs. She is a Fellow of the American Geophysical Union.

Introduction to Keynote Speakers

Prof. TEMMERMAN, Stijn, University of Antwerp, Belgium



Stijn Temmerman is a professor at the University of Antwerp (Belgium) and editor of Estuaries and Coasts. He is a Geographer studying impacts of global change on coasts and river landscapes, and how ecosystems and human society can mitigate and adapt to global change. Coasts and river landscapes are hotspots of biodiversity and human activity, that are impacted by a variety of factors. He likes to contribute to science-based solutions to mitigate global and local impacts on coastal and riverine socio-ecological systems. This involves studies on nature-based mitigation of climate impacts, such as flood risk reduction by marshes and mangroves; climate change mitigation by carbon storage in tidal wetlands; resilience of coastal ecosystems to sea level rise, storms and human impacts.

Prof. WANG, Houjie, Ocean University of China, China



Houjie Wang is currently a professor in Ocean University of China (OUC), the dean of College of Marine Geosciences, OUC and the executive director of Laboratory for Marine Geology in Pilot National Laboratory for Marine Science and Technology (Qingdao). His expertise is in the land-ocean interactions, estuarine and coastal sediment dynamics, and shelf sedimentary processes based on the field observations, laboratory analysis and numerical modelling. His scientific contributions include highlighting work on the response of delta depositional system to the changing environment of large river basin, hyperpycnal flows in highly turbid estuary, and muddy sediment dynamics with complex shelf circulation. He served as Associate Editor for Anthropocene Coasts, as well as editorial members for several Chinese professional journals.

Prof. WOODROFFE, Colin, University of Wollongong, Australia



Professor Colin Woodroffe is a coastal geomorphologist in the School of Earth, Atmospheric and Life Sciences at the University of Wollongong. He has a PhD and ScD from the University of Cambridge, and was a lead author on the coastal chapter in the 2007 Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment report. He has studied the stratigraphy and development of coasts in Australia and New Zealand, as well as on islands in the West Indies, and Indian and Pacific Oceans. He has written a comprehensive book on Coasts, form, process and evolution, and co-authored books on The Coast of Australia and Quaternary sea-level changes. He is Chair of the Commission on Coastal Systems (International Geographical Union).

Introduction to Keynote Speakers

Prof. YU, Xiping, South University of Science and Technology of China, China



Dr. Xiping Yu is a chair professor at Southern University of Science and Technology and a distinguished visiting professor at Tsinghua University. He graduated from Tsinghua University in 1984 and received his doctoral degree at the University of Tokyo in 1990. He served as an associate professor at Nagasaki University from 1993–1997, an associate professor at the University of Tokyo from 1997–1999, a full professor at Shanghai Jiao Tong University from 1999–2000, and a full professor at Tsinghua University from 2001–2021, before he joined SUSTech. Dr. Xiping Yu's research focuses on shallow-water oceanography and coastal engineering. He is particularly interested in nearshore hydrodynamics and water-wave mechanics, two-phase flows and nearshore sediment transport, air-sea interaction under storm conditions, climatology of tropical cyclone activities, etc.

List of Participants

No.	Name	Affiliation	Country
1	ANDREA D'Alpaos	University of Padova	Italy
2	ANDREW Manning	Trinity College Dublin	Ireland
3	BOUMA Tjeerd	Royal Netherlands Institute for Sea Research (NIOZ)	Netherlands
4	BRYAN Karin	University of Waikato	New Zealand
5	CAI Jiaxin	Second Institute of Oceanography, MNR	China
6	CAO Haobing	East China Normal University	China
7	CAO Zhubin	Hohai University	China
8	CHEN Lei	Hohai University	China
9	CHEN Luzhen	Xiamen University	China
10	CHEN Xianjin	Changsha University of Science and Technology	China
11	CHEN Xindi	Tsinghua University	China
12	CHEN Xue	Hohai University	China
13	CHEN Xuechu	East China Normal University	China
14	CHEN Yaping	Virginia Institute of Marine Science	United States
15	CHEN Yining	Second Institute of Oceanography, MNR	China
16	CHEN Yongping	Hohai University	China
17	CHEN Yufan	East China Normal University	China
18	CHEN Yujie	Sun Yat-sen University	China
19	CHEN Zheng	Sun Yat-Sen University	China
20	CHENG Guangcheng	East China Normal University	China
21	CHENG Zhixin	Dalian Maritime University	China
22	CHIROL Clementine	University of Lorraine	France
23	COSTA Wagner	University of Waikato	New Zealand
24	DAI Weiqi	Yellow River Institute of Hydraulic Research	China
25	DING Xuelin	Zhejiang Academy of Marine Sciences	China

No.	Name	Affiliation	Country
26	DING Yue	Zhejiang Ocean University	China
27	DONG Chao	Zhejiang Institute of Hydrogeology and Engineering Geology	China
28	DONG Yanhong	Institute of Soil Science, CAS	China
29	FANG Hongwei	Tsinghua University	China
30	FENG Xi	Hohai University	China
31	FINOTELLO Alvise	Ca Foscari University of Venice	Italy
32	GALLOP Shari	University of Waikato	New Zealand
33	GAO Jianhua	Nanjing University	China
34	GAO Weilun	Beijing Normal University	China
35	GE Jianzhong	East China Normal University	China
36	GE Ran	Hohai University	China
37	GENG Liang	Hohai University	China
38	GONG Shangpeng	Southeast University	China
39	GONG Wenping	Sun Yat-sen University	China
40	GONG Zheng	Hohai University	China
41	GOODWIN Guillaume	University of Padova	Italy
42	GU Chaona	Zhejiang Ocean University	China
43	GU Yuxian	Hohai University	China
44	GUO Leicheng	East China Normal University	China
45	HE Jinyan	Hohai University	China
46	HE Qiang	Fudan University	China
47	HE Qing	East China Normal University	China
48	HIMMELSTEIN Joshua	University of North Carolina at Chapel Hill	United States
49	HU Guodong	Changjiang River Estuary Bureau of Hydrology and Water Resources Survey	China
50	HU Peng	Zhejiang University	China
51	HU Zhan	Sun Yat-sen University	China
52	HUANG Kunhui	Sun Yat-sen University	China

No.	Name	Affiliation	Country
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54	JIAO Jian	Nanjing Hydraulic Research Institute	China
55	JIN Chuang	Hohai University	China
56	JIN Song	Chinese Academy of Sciences	China
57	KANG Yanyan	Hohai University	China
58	LAI Yiping	School of Environmental Science and Engineering	China
59	LI Chang	Nanjing Hydraulic Research Institute	China
60	LI Chunming	Fudan University	China
61	LI Huan	Hohai University	China
62	LI Junjie	Chinese Academy of Science	China
63	LI Shouqian	Nanjing Hydraulic Research Institute	China
64	LI Xue	Jiangsu Ocean University	China
65	LIANG Huidi	Second Institute of Oceanography, MNR	China
66	LIU Bing	Second Institute of Oceanography, MNR	China
67	LIU Chunyu	SouthEast University	China
68	LIU Hanren	Second Institute of Oceanography, MNR	China
69	LIU Quanxing	East China Normal University	China
70	LIU Yongchao	Ningbo University	China
71	LUCA Carniello	University of Padova	Italy
72	MARIOTTI Giulio	Louisiana State University	United States
73	MASTORIS-KOURM PANIS Dimitrios	University of Patras	Greece
74	MI Jie	Shanghai Normal University	China
75	MIRIAN Jimenez Tobio	Universidad de Cantabria	Spain
76	MÖLLER Iris	Trinity College Dublin	Ireland
77	MUDD Simon	University of Edinburgh	United Kingdom
78	NEPF Heidi	Massachusetts Institute of Technology	United States
79	NGUYEN Hieu	University of Waikato	New Zealand
80	PAN Yi	Hohai University	China

No.	Name	Affiliation	Country
81	PUPPIN Alice	University of Padova	Italy
82	QI Man	Central China Normal Univeristy	China
83	ROUNCE Juliet	Trinity College Dublin	Ireland
84	SHAN Kaiyue	Tsinghua University	China
85	SHAO Dongdong	Beijing Normal University	China
86	SHAO Zhanchao	University of Waikato	New Zealand
87	SHEN Chengji	Hohai University	China
88	SHI Benwei	East China Normal University	China
89	SHI Luming	Ocean University of China	China
90	SHI Wei	University of Padova	China
91	STIVE Marcel	Delft University of Technology	Netherlands
92	STOKES Debra	Southern Cross University	Australia
93	SU Min	Hohai University	China
94	SUN Chao	Ningbo University	China
95	TANG Jun	Dalian University of Technology	China
96	TEMMERMAN Stijn	University of Antwerp	Belgium
97	TINOCO Rafael	University of Illinois at Urbana Champaign	United States
98	TOGNIN Davide	University of Padova	Italy
99	TOWNEND Ian	University of Southampton	UK
100	TU Junbiao	Tongji University	China
101	VALENTINE Kendall	Virginia Institute of Marine Science	United States
102	WANG Aijun	Third Institute of Oceanography, MNR	China
103	WANG Dawei	Beijing Normal University	China
104	WANG Haiyu	HoHai University	China
105	WANG Houjie	Ocean University of China	China
106	WANG Qing	Beijing Normal University	China
107	WANG Xinyan	Beijing Normal University	China

No.	Name	Affiliation	Country
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110	WANG Zheng Bing	Delft University of Technology	Netherlands
111	WEI Jiaxin	Hohai University	China
112	WEI Yizhang	Hohai University	China
113	WIESEBRON Lauren	Royal Netherlands Institute for Sea Research	Netherlands
114	WOODROFFE Colin	University of Wollongong	Australia
115	WU Dean	Hohai University	China
116	WU Guoxiang	Ocean University of China	China
117	XIE Bin	East China Normal University	China
118	XIE Danghan	Utrecht University	Netherlands
119	XIE Dongfeng	Zhejiang Institute of Hydraulics and Estuary	China
120	XIE Dongmei	Hohai University	China
121	XIE Tian	Beijing Normal University	China
122	XU Peng	Chinese Academy of Sciences	China
123	XU Tianping	Sun Yat-sen University	China
124	XU Weiya	Hohai University	China
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126	YANG Jialing	Nanjing Normal University	China
127	YANG Yuanping	Zhejiang Institute of Hydraulics and Estuary	China
128	YANG Zhicheng	University of Padova	Italy
129	YAO Peng	Hohai University	China
130	YAO Yu	Changsha University of Science and Technology	China
131	YE Leiping	Sun Yat-sen University	China
132	YE Weifeng	Sun Yat-Sen University	China
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134	YIN Kai	Southeast University	China

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138	YU Zhibin	Hohai University	China
139	YUAN Hongyou	Yellow Sea Wetland Research Institute	China
140	ZHANG Changkuan	Hohai University	China
141	ZHANG Heyue	Hohai University	China
142	ZHANG Kaili	Hohai University	China
143	ZHANG Min	Shanghai Normal University	China
144	ZHANG Mingliang	Dalian Ocean University	China
145	ZHANG Qian	Hohai University	China
146	ZHANG Rong	Hohai University	China
147	ZHANG Weina	Jiangsu University of Science and Technology	China
148	ZHAO Bingxue	Nanjing University	China
149	ZHAO Kun	Hohai University	China
150	ZHAO Lixia	East China Normal University	China
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155	ZHOU Zhengquan	Utrecht University	China
156	ZHU Qin	Southern Marine Science and Engineering Guangdong Laboratory (Guangzhou)	China
157	ZHU Wenjin	Jiangsu Ocean University	China
158	ZHU Zhenchang	Guangdong University of Technology	China
159	ZONG Ying	Nanjing Normal University	China
160	ZOU Yue	Hohai University	China
161	ZUO Liqin	Nanjing Hydraulic Research Institute	China

Notes

