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EDITORIAL

The 7th International Conference on Coastal Dynamics, Arcachon, France, 24–28 June 2013

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The international *Coastal Dynamics* conference has rapidly become one of the most important meetings for scientists active in the field of nearshore sciences and coastal evolution. The first event took place in 1994, and since 2001, the conference is held every 4 years, typically in Europe although once in Japan in 2009. The *Coastal Dynamics* conference series advances the community's understanding of recent applied and basic research concerning coastal waves and currents, interactions between wind, water and sediments, and morphology changes in the coastal zone. A wide range of environments (with and without structures) are considered such as sandy, rocky, and muddy coasts, inlets, and estuaries. The conference documents research and applications treating these coastal dynamics at the short, medium, and large/long spatial and temporal scales.

The 7th International Conference on *Coastal Dynamics* was held in June 23–26, 2013, in the city of Arcachon, France. It was jointly hosted by the University of Bordeaux, the Centre National de la Recherche Scientifique (CNRS) and the Service Hydrographique et Océanographique de la Marine (SHOM), chaired by Dr. Philippe Bonneton and Dr. Thierry Garlan. Approximately 270 researchers from 27 countries attended the conference. At the conference, we had 137 oral and 51 poster presentations, each associated with a full paper in the conference proceedings volume. The contributions were selected among more than 300 submitted abstracts, peer reviewed by an international technical abstract review committee. During the conference, three keynote lectures were given by Gerben Ruessik, Huib de Swart and Fabrice Ardhuin. The conference also comprised two short courses and two field trips in the Arcachon lagoon and adjacent beaches. A gala dinner took place at the prestigious Chateau Smith-Haut-Lafitte. During the dinner, the organizing committee honoured Prof. Peter Nielsen as the *Coastal Dynamics'13* coastal award winner, for his significant contribution in the field of coastal sediment transport. The organizing committee also announced the *Coastal Dynamics'13* best student presentation winners, Anouk de Bakker, Melissa Moulton and Gerad Dam and the *Coastal Dynamics'13* best student poster winner Thibaud Revil-Baudard.

For this Topical Collection, we had thus invited 15 papers that were presented at the conference based on (1) the overall impression during the presentation at the conference including comments from the audience, (2) our own additional review of the candidate papers and (3) scores and comments from the first abstract review round. The authors of these 15 papers were further invited to submit a full scientific paper to meet the *Ocean Dynamics* guidelines and to be evaluated through its regular peer-review process. All 15 papers did pass the review round, as anticipated, given the criteria of the invitation process.

Roland and Ardhuin (2014) review the recent improvements in forcing fields, physical parametrizations and numerical techniques of spectral wave models, which can now provide highly accurate wave hindcasts and forecasts. Arns et al. (2015) propose a methodology to estimate regionalized return water levels at ungauged sites, illustrated by an application to the northern coast of Germany. Two papers deal with modelling of interactions between hydrodynamics and

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vegetation. The paper of Wu (2014) presents the development of a 3-D shallow water model to simulate flow and waves attenuated by vegetation, showing satisfactory agreement with laboratory experiments. The paper of Kombiadou et al. (2014) describes the effect of current-seagrass interactions on flow and suspended sediment transport for the specific case of *Zostera noltei* in a real meso-tidal coastal lagoon. The cross-shore distribution of wave and currents in the surf zone is also addressed in two papers. Buckley et al. (2014) compare the ability of three open source process-based models to simulate the cross-shore distribution of gravity and infragravity wave height, wave spectra and wave set-up in steep reef environments. In Nam et al. (2014), a numerical model of undertow is developed and successfully validated against small- and large-scale laboratory experiments. Castelle et al. (2014) use a process-based model to address the influence of the surf-zone sandbar morphology on the ability of wave-driven rip currents to expel passive tracers towards the inner shelf. Tanaka et al. (2014) use field data from several rivers in the Tohoku region during the great Chilean tsunami of 2010 and the great East Japan tsunami of 2011 to derive relationships between tsunami propagation and river morphology.

The subsequent papers address costal evolution and nearshore morphodynamics. Two papers deal with long-term morphological evolutions in tidal channels. The paper of Capo et al. (2014) shows an interesting application of ocean colour remote sensing to inverse the channel bathymetry in moderately turbid waters. The method is used to analyse decadal morphology changes in the Arcachon mixed-energy inlet. A second paper (Wang et al. 2014) describes an application of the finite volume coastal ocean model to investigate long-term (centennial) morphological evolution of a channel-shoal system. Kabuth and Kroon (2014) investigate the spatial patterns of multi-decadal shoreline changes in two micro-tidal, low-energetic embayments, as a function of the directional distribution of wave energy fluxes and a slope-based morphological coastal classification. In Daly et al. (2014), the influence of selection and sequencing of representative wave climate conditions on the process-based prediction of the observed equilibrium bathymetry of embayed beaches is investigated. Ribas et al. (2014) address the occurrence and characteristics of transverse finger bars at a wave-dominated beach. The authors show that a morphodynamic model is able to predict their main morphological characteristics. Moulton et al. (2014) propose a new method to provide temporally and spatially dense maps of evolving complex surf-zone bathymetry using spatially sparse in situ altimeters. The last paper by Miles et al. (2014) provides a detailed description of the evolution of wave ripples and mega-ripples in the surf and shoaling zones of a sandy macrotidal dissipative beach.

The preparation of this Topical Collection was an international effort, and we would like to express sincere thanks to all the reviewers of this issue who have generously contributed with advice and time to ensure the quality of this publication, as well as to Rodrigo Cienfuegos who served as guest associate editor for four of the Topical Collection papers.

References

Arns A, Wahl T, Haigh I, Jensen J (2015) Determining return water levels at ungauged coastal sites: a case study for northern Germany. Ocean Dyn 65(4):539–554. doi:10.1007/s10236-015-0814-1

Buckley M, Lowe R, Hansen J (2014) Evaluation of nearshore wave models in steep reef environments. Ocean Dyn 64(6):847–862. doi:10.1007/s10236-014-0713-x

Capo S, Lubac B, Marieu V, Robinet A, Bru D, Bonneton P (2014) Assessment of the decadal morphodynamic evolution of a mixed energy inlet using ocean color remote sensing. Ocean Dyn 64(10): 1517–1530. doi:10.1007/s10236-014-0762-

Castelle B, Reniers A, MacMahan J (2014) Bathymetric control of surf zone retention on a rip-channelled beach. Ocean Dyn 64(8):1221–1231. doi:10.1007/s10236-014-0747-0

Daly C, Bryan K, Gonzalez M, Klein A, Winter C (2014) Effect of selection and sequencing of representative wave conditions on process-based predictions of equilibrium embayed beach morphology. Ocean Dyn 64(6):863–877. doi:10.1007/s10236-014-0730-9

Kabuth A, Kroon A (2014) Wave energy fluxes and multidecadal shoreline changes in two coastal embayments in Denmark. Ocean Dyn 64(5):741–754. doi:10.1007/s10236-014-0709-6

Kombiadou K, Ganthy F, Verney R, Plus M, Sottolichio A (2014) Modelling the effects of Zostera noltei meadows on sediment dynamics: application to the Arcachon lagoon. Ocean Dyn 64(10): 1499–1516. doi:10.1007/s10236-014-0754-1

Miles J, Thorpe A, Russell P, Masselink G (2014) Observations of bedforms on a dissipative macrotidal beach. Ocean Dyn 64(2): 225–239. doi:10.1007/s10236-013-0677-2

Moulton M, Elgar S, Raubenheimer B (2014) Improving the time resolution of surfzone bathymetry using in situ altimeters. Ocean Dyn 64(5):755–770. doi:10.1007/s10236-014-0715-8

Nam P, Oumeraci H, Larson M, Hanson H (2014) Modeling undertow due to random waves. Ocean Dyn 64(8):1209–1219. doi:10.1007/s10236-014-0748-z

Ribas F, Doeschate A, de Swart H, Ruessink B, Calvete D (2014) Observations and modeling of surf zone transverse finger bars at the gold coast, Australia. Ocean Dyn 64(8):1193–1207. doi:10.1007/s10236-014-0719-4

Roland A, Ardhuin F (2014) On the developments of spectral wave models: numerics and parameterizations for the coastal ocean. Ocean Dyn 64(6):833–846. doi:10.1007/s10236-014-0711-z

Tanaka H, Kayane K, Adityawan M, Roh M, Farid M (2014) Study on the relation of river morphology and tsunami propagation in rivers. Ocean Dyn 64(9):1319–1332. doi:10.1007/s10236-014-0749-y

Wang YH, Wang CH, Tang LQ, Liu DB, Guo CS, Liu CJ, Zhao HM (2014) Long-term morphological response to dredging including cut-across-shoal in a tidal channel-shoal system. Ocean Dyn 64(12):1831–1843. doi:10.1007/s10236-014-0786-6

Wu W (2014) A 3-d phase-averaged model for shallow-water flow with waves in vegetated water. Ocean Dyn 64(7):1061–1071. doi:10.1007/s10236-014-0739-0