

First Circular – Workshop of the International Space Science Institute (ISSI) – 4 December 2017

Understanding the relationship between coastal sea level and large-scale ocean circulation

Date: 5 – 9 March 2018

Location: International Space Science Institute (ISSI), Hallerstrasse 6, 3012 Bern, Switzerland

Workshop website: <http://www.issibern.ch/workshops/coastoceanproc/>

Conveners:

Anny Cazenave	(ISSI, Switzerland & LEGOS, Toulouse, France)
Catia Domingues	(University of Tasmania, Australia)
Teodolina Lopez	(ISSI, Switzerland)
Benoit Meyssignac	(Laboratoire d'Etudes en Géophysique et Océanographie Spatiales, France)
Rui Ponte	(Atmospheric and Environmental Research, USA)
Detlef Stammer	(University of Hamburg, Germany)

Local organisation: Alexandra Lehmann (secretary) – Alexandra.Lehmann@issibern.ch
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Summary:

Many atmospheric and oceanographic factors associated with both large-scale and local variability can influence coastal sea level on time scales from hours to decades. Previous studies have pointed out differences between observed sea level behavior at the coast and over adjacent shallow and deep ocean regions. Short spatial structures can arise from coastally trapped waves and currents, localized tidal resonances, bathymetric controls, local atmospheric forcing and other factors, and all of these influences are a function of location and timescale. Identifying these various influences is essential for understanding, simulating, and predicting coastal sea level variability, which remains a key societal concern in the context of a changing climate.

Main objectives of this workshop:

- (i) To review the current understanding of coastal sea level variability, from seasonal to multi-decadal time scales, to identify key processes causing coastal sea level changes, and to characterize the spatio-temporal structure of sea level variability across the coastal zone, and also the relationship between variability and change at the coast and the large-scale open ocean.
- (ii) To review the currently available observing systems informing on sea level changes in coastal areas and identify priority gaps and uncertainties.
- (iii) To assess the ability of ocean syntheses in estimating coastal sea level variations on seasonal to multi-decadal time scales and of atmosphere-ocean global coupled models (AOGCMs) in projecting coastal sea level driven by climatic processes. Non-climatic processes will also be addressed, including the possibility to simulate their future evolution

Outcomes of the Workshop:

An important outcome of the workshop is a book published in the Space Sciences Series of ISSI by Springer (SSSI, see www.issibern.ch/publications). This volume is not intended to be the proceedings of the Workshop, but a collection of in-depth peer-reviewed papers informed by the contributions and discussions at the Workshop. It should provide a coherent picture of the current state of the subject. The papers are both published in the hardcover book (in the Space Science Series of ISSI) and individually in a special issue of *Surveys in Geophysics* journal as soon as they

are reviewed. We aim for submitting the papers within 3-6 months after the workshop. While several oral presentations are allocated to each session, we would like to encourage you to aim at overview papers for each topic co-authored by the scientists that contribute to each one of the sessions rather than going for several individual papers on similar topics covered within the same session. The journal issue and the SSSI volume are expected to appear about 12 months after the workshop.

Expectation of the participants:

We expect from you an oral presentation of about 20 minutes at the workshop (+ 10 minutes for questions) and an active participation during plenary discussions, plus contribution to overview/review papers to be published later on after the workshop into the SSSI volume.

Attendance: This Workshop is by invitation only with a limited number of participants.

Invitation letter: If you need an official invitation letter, please contact directly Alexandra Lehmann (Alexandra.Lehmann@issibern.ch).

Fundings: ISSI provides the subsistence costs (hotel and per diem to cover meals) to all participants while in Bern, and deals with all organizational matters such as reservations, reimbursements (please contact directly Alexandra Lehmann) and computer issues. However, we are not in a position to cover your travel costs. There is also no registration fee for the Workshop.

Schedule:

First Circular:	4 December 2017
Second Circular & Final programme	8 January 2018
Registration & Hotel Reservation Deadline:	15 February 2018
Workshop Date:	5-9 March 2018