

Outline of ISSI book

“Integrative study of the mean sea level and its components”

Introductory section

- Foreword: International cooperation to produce space-based ECVs (*P. Lecomte & E. Lindstrom*)
- Introduction: What we know and what we don't know about sea level and its components ? Focus on the altimetry era - since 1993 - during which different space and in situ observing systems are available. (*A. Cazenave, J. Benveniste & S. Jevrejeva*)

Section I: Observations & Contributors to Sea Level

- Altimetry-based sea level, global and regional (*M. Ablain, M. Marcos, L. Fenoglio-Marc, J.F. Legeais, J. Benveniste*)
- Coastal altimetry and tide gauges (*P. Cipollini, S. Jevrejeva, A. Melet, P. Prandi*)
- Steric sea level (*C. Merchant, C. Macintosh, K. von Schuckmann*)
- Ice sheets (*A. Shepherd, R. Forsberg, N. Champollion*)
- Glaciers (*B. Marzeion, P. Leclercq, K. Langley, F. Paul, W. Haeberli, N. Champollion*)
- Land waters (*Y. Wada*)
- GIA and other gravitational factors (*G. Spada*)

Section II: Sea Level Processes at Regional Scale

- Regional patterns in sea level, sea surface temperature, steric sea level and ocean colour (*B. Meyssignac, C. Merchant, C. MacIntosh, S. Sathyendranath, R. Brewin, M.-F. Racault*)
- Internal ocean modes and their impacts on the spatial patterns (*W. Han, H. Palanisamy*)
- Sea level and sea ice in the Arctic Ocean (*J. Johannessen, S. Sandven, S. Kern, M. Ablain, P. Thibaut*)
- Mechanistic understanding of ocean primary producer responses to ENSO variability (*M.-F. Racault, R. Brewin, S. Sathyendranath*)

Section III: Sea Level Closure Budget at Global and Regional Scale

- Last century (*S. Jevrejeva, A. Melet, B. Meyssignac, G. Spada, Y. Wada*)
- Altimetry period, 1993/2015 (*A. Cazenave, W. Llovel, D. Chambers, A. Shepherd, F. Paul, R. Forsberg, Y. Wada*)
- GRACE and Argo period, 2003/05-2015 (*D. Chambers, W. Llovel, H. Dieng, A. Cazenave, N. Champollion, Y. Wada, K. von Schuckmann*)
- Closure of sea level budget at regional scale (*L. Fenoglio-Marc, M. Marcos, D. Chambers, K. von Schuckmann*)

Section IV: From Observations to Sea Level Projections

- Improvement of general ocean circulation models using observations (*D. Stammer, A. Köhl, M. Scharffenberg*)
- Assessment of climate models (*A. Melet, B. Meyssignac, J. Johannessen*)
- Sea level projections at global and regional scales (*A. Slangen, R. Winkelmann, Y. Wada, S. Jevrejeva, S. Planton*)

Section V: Detection & Attribution

- Impact of internal variability vs anthropogenic forcing on sea level at global and regional scale (*M. Marcos, A. Slangen, H. Palanisamy, W. Han, L. Fenoglio-Marc, S. Dangendorf*)
- Detection & attribution applied to glacier and ice sheet ? (*B. Marzeion, A. Shepherd, R. Winkelmann*)

Concluding Section

- Remaining key scientific questions, gaps and uncertainties, missing observations, ...: (*All*)

Schedule:

- Deadline for articles submission: **1 December 2015**
- Articles publication: ~6 months later