William Smith Meeting of the Geological Society 2008

Observations and Causes of Sea-Level Change on Millennial to Decadal Timescales

Burlington House, London
(September 1-2)

This meeting focuses on the measurement and interpretation of sea-level changes during the past few millennia and up to the present day. We hope to attract Quaternary geologists, geophysicists, geodesists, oceanographers and glaciologists to discuss the wide range of observational and modelling constraints that can be applied to better understand sea level change. The number of delegates will be limited to ~120 and the 2-day meeting will be divided into four parts, each representing a different time period: Late Holocene, Last Century, Satellite Era, Future. Four keynote talks will highlight recent developments and current/future challenges, and the William Smith lecture will be on the second day of the meeting.

William Smith Lecturer
Jerry Mitrovica

Keynote Speakers

Late Holocene	*Last Century*	*Satellite Era*	*Future*
Kurt Lambeck	Phil Woodworth	Don Chambers	Jonathan Gregory

Descriptions of each session are given below. A preliminary programme and details of the registration procedure are at www.geolsoc.org.uk/gsl/events/listings/page3053.html . There are a limited number of oral slots available (30 mins) and so most submissions will be presented in poster format. Four discussion periods (20 mins) have been allocated after each of the four sessions. A preliminary programme will be uploaded onto the web site in due course. If you have any questions please do not hesitate to contact the Geological Society (+44 (0)20 74349944) or one of the meeting organisers: Chair – Glenn Milne, g.a.milne@durham.ac.uk; Co-Chairs – Roland Gehrels, w.r.gehrels@plymouth.ac.uk; Chris Hughes, cwh@pol.ac.uk; and Mark Tamisiea, mtam@pol.ac.uk.

Session 1: *Millennial scale changes (Late Holocene)*
Observations during the late Holocene provide an important reference (of natural variability) to which more recent observations can be compared. Key issues/questions: Spatial and temporal variability in observations – how well are they understood? What is the current state-of-the-art in reconstructing sea-level changes from proxy methods at millennial to decadal timescales? What was the contribution of the cryosphere to sea-level change during this period?
(Confirmed speakers: Mike Bentley, Robin Edwards, Kurt Lambeck, Antony Long.)

Session 2: *Multi-decadal to century scale changes (celebrating 75th anniversary of PSMSL)*
The climate system responds to recent warming. Key issues/questions: Evidence for regional/global acceleration during this period (compared to Late Holocene trend). Spatial and temporal variability in data – how well are they understood? The 20th century attribution problem – current status on

data/modelling to reconcile observed and estimated global sea-level rise during the past 50-100 years.
(Confirmed speakers: Philippe Huybrechts, Matt King, Phil Woodworth.)

Session 3: *Satellite Era*
Step change in spatial coverage of observations. Key issues/questions: How well is spatial variability in observed sea-level change understood? What is the ability of GRACE satellite to directly constrain mass variations within the oceans? Are these constraints consistent with those obtained from direct observation of the cryosphere? What are the main limitations in our understanding of sea-level changes during this period? What is the progress in combining multiple geodetic and oceanographic datasets to create integrated models of sea-level change?
(Confirmed speakers: Don Chambers, Josh Willis, Carl Wunsch)

Session 4: *Predicting future changes*
Application of current models/data to predict future sea-level change. Key issues/questions: What are the primary limitations in predicting mass and steric contributions to future sea-level change for a given climate scenario? Are global mean estimates useful? Should we be moving towards regional/local estimates of sea-level change? Case study for the UK: measurements and modelling of vertical land motion; storm forecasting; coastal response at the estuary scale.
(Confirmed speakers: Jonathan Gregory, Kevin Horsburgh, Norman Teferle.)