



## CHAIRE DÉVELOPPEMENT DURABLE - ENVIRONNEMENT, ENERGIE ET SOCIÉTÉ

Professeur Anny Cazenave

Titulaire, année académique 2012-2013

# Climate change and sea level rise; Coastal vulnerability and societal impacts

Workshop in english



Sea level rise represents a major threat of on-going and future global warming for low-lying, highly populated coastal regions worldwide. Under the combined effects of human-induced factors and natural phenomena, some coastal regions already suffer from shoreline erosion and submersion. Moreover, in addition to a global mean elevation, sea level presents an important regional variability that, in some areas, amplifies the rate of sea level rise.

During this workshop, we will present the most recent updates about sea level observations and projections for the next few decades, highlighting the importance of the regional variability. We will provide a synthesis of the various phenomena causing shoreline modifications on interannual to multidecadal time scales and will discuss the causes of observed shoreline erosion for the past few decades. More focused presentations about impacts of sea level rise will be provided for a number of coastal regions (Netherlands, Asian deltas, tropical atolls, Quebec and France), with focus on economical and societal consequences as well as on potential adaptation strategies.

Chaire créée  
avec le soutien de



### 10 June

- 09h30 Objectives of the Workshop**  
Anny Cazenave, Collège de France
- 09h45 Present-day Global Mean Sea Level Rise; Observations and Causes**  
Anny Cazenave, Collège de France
- 10h05 Regional Variability: Causes for Contemporary Regional Sea Level Changes**  
Detlef Stammer, Institute of Oceanography, University of Hamburg (Germany)
- 10h45 Regional Sea Level Variations Due to Post Glacial Rebound and Solid Earth Response to Ongoing Land Ice Melt**  
Giorgio Spada, Urbino University (Italy)
- 11h15 Vertical Crustal Motions of the Earth's Crust: Processes and Observations**  
Guy Woppelmann, University of La Rochelle (France)
- 11h45 Apparent Sea Level Rise and Earthquakes**  
Valérie Ballu, University of La Rochelle (France)
- 12h00 Total Relative Sea Level Changes since 1950 in Different Regions of the World Ocean**  
Benoit Meyssignac, LEGOS (Laboratoire d'Etudes en Géophysique et Océanographie Spatiales, France)
- 12h30 Lunch**
- 14h00 The Driving Factors of Coastal Evolution – Toward a Systemic Approach**  
Manuel Garcin, BRGM (Bureau de Recherches Géologiques et Minières, France)
- 14h30 Sea Level Rise Effects on Coastal Erosion: Review of Observations for the Past Few Decades**  
Gonéri Le Cozannet, BRGM (France)
- 15h00 Sea Level Projections (Global and Regional) for the 21st Century**  
David Salas, CNRM-Météo France (Centre national de recherches météorologiques, France)
- 15h30 Contributions of Greenland and Antarctica to Future Sea Level Rise**  
Catherine Ritz, LGGE (Laboratoire de Glaciologie et Géophysique de l'Environnement), Université Joseph Fourier - Grenoble (France)
- 16h00 Break**
- 16h30 Modelling the Future Total Relative Sea Level of the 21st Century at Regional/Local Scale**  
Roderik van der Val, Institute for Marine and Atmospheric research - Utrecht (IMAU), University of Utrecht (The Netherlands)
- 17h00 Forecasting Climate and Sea Level Changes on Decadal Time Scale; State of the Art and Limitations**  
Philippe Rogel, CERFACS (Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique, France)
- 17h30 Adourn**

### 11 June

- 09h00 Extreme Sea Levels; Past and Future**  
Svetlana Jevrejeva, National Oceanography Center (United Kingdom)
- 09h30 Sediment Dynamics and Coastal Zone Management**  
Patrice Walker, CREOCEAN (France)
- 10h00 Coastal Vulnerability of Asian Mega Deltas: Natural Delta System versus Human-influenced Recent Changes**  
Yoshiki Saito, Geological Survey of Japan (Japan)
- 10h30 Rising Sea Level: the Dutch Strategy on how to Cope with Climate Change in the 21st Century**  
Marcel Stive, Faculty of Civil Engineering and Geosciences (CITG), Delft University of Technology (The Netherlands)
- 11h00 Break**
- 11h30 Risk Management: an Opportunity for Adaptation to Climate Change and Sea Level Rise in Coastal Zones**  
Jean-Pierre Savard, OURANOS (Consortium on Regional Climatology and Adaptation to Climate Change, Canada)
- 12h00 Coastal Adaptation to Climate Change: from Observations to Public Policies in France**  
Nicole Lenôtre, BRGM (France)
- 12h30 The French Coastal Environment: Land Use, Coastal Conservation, Demographic Pressure, Risks and Consequences of Climate Change**  
Sebastien Colas, Ministère de l'Ecologie et du Développement durable (France)
- 13h00 Lunch break**
- 14h30 From Climate Change Hypothesis to the Sizing of Coastal Infrastructures**  
Michel Benoit, Laboratoire Saint Venant-EDF, Cetmef, Ecole des Ponts et Chaussées (France)
- 15h00 Societal and Economic Impacts of Sea Level Rise**  
Vincent Viguié, CIRED (Centre international de Recherche sur l'Environnement et le Développement, France)
- 15h30 General Discussion; Recommendations for Future Research**
- 16h00 End of the workshop**