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Editorial / Preface

Interdisciplinary Research and Perspectives on Current and Future Storm Surges

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Storm surges represent a major hazard for many coastal regions worldwide. The 1953 and 1962 disasters are well remembered in Europe, incidents in Bangladesh and Myanmar caused over 100,000 casualties, and Hurricanes Katrina and Sandy have recently had devastating consequences for the USA. Developing innovative responses and overcoming the frequently fragmented discussion about this global phenomenon and its regional implications call for improved knowledge of present risks and future conditions based on sound interdisciplinary approaches.

This volume on “RISK AND MANGEMENT OF CURRENT AND FUTURE STORM SURGES” contains a selection of papers presenting the current state of the art storm surges research. It follows up contributions from the ‘2010 Storm Surges Congress’ hold in Hamburg, Germany. Around 200 academics and coastal users from 30 countries presented perspectives from the natural and social sciences, and illuminated regional aspects of storm surges. The congress was organized by the Institute of Coastal Research, Helmholtz-Zentrum Geesthacht (formerly GKSS-Research Centre) in collaboration with the KlimaCampus (CliSAP) of the University of Hamburg, Germany.

The research and findings represented in the volume contribute to the interdisciplinary coastal research conducted at the Institute of Coastal Research at the Helmholtz-Zentrum Geesthacht, Centre for Materials and Coastal Research and to the science plan and global synthesis of LOICZ – the Land-Ocean Interaction in the Coastal Zone project of the International Geosphere-Biosphere and International Human Dimensions on Global Environmental Change Programmes.

The special issue covers a wide range of topics circulating around flashlights of storm surges research such as:

- coastal vulnerability and resilience to storm surges
- flood risk and protection measures in light of climate change
- global and regional mapping of storm surges and case studies from France, Belgium, India and Korea

- modelling assessments on the effects of individual storms
- effects of uncertainty and implications on surge level estimation

We hope that interested readers such as scientific peers, researchers, practitioners as well as early stage-researchers from different disciplines such as coastal and marine sciences, from hazard and disaster research, meteorology and climatology, environmental science and engineering and the business sector (e.g. from insurances) will gain new insights from the published work and benefit from the results presented.

The Guest Editors, hosts and organizers of the congress acknowledge all scientists contributing to the special issue and the success of the conference as such. Special credits should be given to the following international and national partners who generously supported the event (in alphabetic order) namely the Alexander von Humboldt Foundation (AVH), the Federal Waterways Engineering and Research Institute (BAW), the Federal Maritime and Hydrographic Agency of Germany (BSH), the Coasts, Oceans, Ports, and Rivers Institute (COPRI), the German Committee for Disaster Reduction (DKKV), the German Weather Service (DWD), the European Space Agency (ESA), the Free and Hanseatic City of Hamburg, the Gesellschaft zur Förderung des GKSS-Forschungszentrums e.V. (GF), Hamburg Port Authority (HPA), International Arctic Science Committee (IASC), the KlimaCampus Hamburg – Cluster of Excellency ‘Integrated Climate Analysis and Prediction’ (CliSAP), the Agency for Roads, Bridges and Waters (LSBG), the Ministry of Agriculture, Environment and Rural Areas (MLUR), the University of Hamburg (UHH), the United Nations Educational, Scientific and Cultural Organization/Intergovernmental Oceanographic Commission (UNESCO/IOC), and the United Nations University, Institute for Environment and Human Security (UNU-EHS).

Guest Editors and host representatives of the congress believe that this Special Issue will contribute to the ongoing discussion and knowledge transfer in the field of storm surges as a global and global change phenomenon and coastal vulnerability research in general.

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