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Risk and Management of Current and Future Storm Surges

Storm surges represent a major hazard for many coastal regions worldwide. The 1953 and 1962 catastrophes are well remembered in Europe, and recent incidents in Bangladesh and Myanmar caused over 100,000 casualties. 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 selection of articles presents multiple scientific and management oriented perspectives on current and future storm surges, covering the fields of observing, modelling and forecasting, risk and vulnerability analysis, planning and innovative coastal protection concepts. It originates from the international '2010 Storm Surges Congress - Risk and Management of Current and Future Storm Surges,' initiated and organized by the Institute of Coastal Research, Helmholtz-Zentrum Geesthacht (formerly the GKSS-Research Centre) in collaboration with the KlimaCampus (CISAP) of the University of Hamburg, Germany. The Land-Ocean Interactions in the Coastal Zone (LOICZ) co-sponsored the event and its international project office (IPO) provided the necessary organizational support. The congress was generously supported by international and national partners. Some highlights: Remote sensing surveillance and mapping of storm surge extent based on NASA MODIS sensors may ultimately provide new global insights into the vulnerability of deltas where human pressures outbalance natural land-ocean forcing. Up-scaling hazard lines and risk mapping from local to full continental scale is the ambition in India. From an insurance risk perspective, its societal perception and economic issues determine societal response options. In urban contexts flood risk is anticipated as a combination of climate change-induced sea level rise and socio-economic drivers.

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