

Storm surges, perspectives and options

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This review paper attempts to summarize the scattered and fragmented knowledge about past and possible future changing storm surge statistics – with using the particularly well studied case of the North Sea as an example. For this region, a complete and robust analysis methodology has been developed in the past years. This methodology is based on dynamical and statistical models. Using the concept of dynamical downscaling, the development during the past decades, when sufficiently good and homogeneous weather data exist, has been “reconstructed”, and scenarios of possible future change are described. A “localization” allows to estimate changes at specific sites, e.g. harbors. Since local water level statistics do depend not only on climate variations but also on local modifications of the local bathymetry, new options for adaptation emerge. For the case of Hamburg, an option for such future adaptations are discussed.