

The last 50 and the next 100 years – extra-tropical storms and their coastal impacts in Northern Europe

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A cascade of global and regional models combined with statistical modeling has been implemented

- to describe in detail changing storminess, wave conditions and coastal surge statistics in the North Sea region during the past 50 years, and
- to construct scenarios of possible future conditions of storminess, surge statistics and wave conditions for the coming 100 years.

It turns out that storminess has undergone a significant intensification in 1960-1990, but that the trend has ceased; also the variations did not go beyond the range of variations estimated from proxy data since about 1800. For the future, marginal increases of strong wind incidence are expected, which lead to moderate increases of wind-induced surge heights and wave heights. When the expected wind-induced surge heights are combined with the expected mean sea level height, changes of extreme water levels of the order of 70 cm, or so, appear plausible for the end of this century.

Data from these efforts are publicly available through the CoastDat web portal.