



## **Tropical storm tracks in a global tide and storm surge reanalysis**

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Flooding due to tides and storm surges causes massive societal impacts and the largest economic damage of all flood hazards. To adequately estimate and counteract upon their risk, sound global scientific information on hazards due to storm surges and tides is required. Recently, a first global tide and storm surge reanalysis (GTSR) has been prepared (Muis et al., 2015) that provides a 36 year time series of sea levels, along with extreme value statistics. The GTSR is established using a physically based model, forced by meteorological reanalysis data.

Validation of GTSR showed that tropical storms are underrepresented, firstly, due to the fact that they occur rarely and then only affect a limited area, and secondly, because the spatio-temporal resolution of reanalysis wind and pressure fields is too low to accurately represent the strong spatio-temporal variability of tropical storms.

In this contribution, we show the GTSR as well as its recent advancements by contributing a large amount of historical tropical storm tracks into the analysis. This advancement is seen as a first step to accommodate tropical storms in the reanalysis. We estimate how the statistics of the meteorological extremes in pressure and wind are changing, and consequently, how this translates into new statistics of storm surge extremes.