EGU2020-20015
https://doi.org/10.5194/egusphere-egu2020-20015
EGU General Assembly 2020

Attributing coastal flood damages to sea level rise for recent flood events

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Sea level rise increases extreme water levels and thus the flood losses from storm surge events. While it is still difficult to estimate the influence of climate change on single storms, the influence of anthropogenic climate change on sea level rise is evident. We here aim to quantify the fraction of damages caused by sea level rise for a set of flood events of the last decade. Flood-extents and the spatial distribution of damages are reconstructed from openly available data-sources. We construct counterfactual flood extents for each event by a counterfactual sea level as it would have been in a world without climate change. As we are particularly interested in losses in poorer countries that often lack high resolution data such as LiDAR based elevation maps or tide-gauge records, our methodology is transferable between regions, building on global and open data. Depending on the study site, we detect a difference between observed and counterfactual damages though uncertainties remain high. Data availability and data detail remain a major restriction.