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TITLE: Spatial and temporal analysis of extreme sea level and storm surge events around the coastline of the UK

AUTHOR: ['Ivan D. Haigh', 'Matthew P. Wadey', 'Thomas Wahl', 'Ozgun Ozsoy', 'Robert J. Nicholls', 'Jennifer M. Brown', 'Kevin Horsburgh', 'Ben Gouldby']

ABSTRACT:

In this paper we analyse the spatial footprint and temporal clustering of extreme sea level and skew surge events around the UK coast over the last 100 years (1915-2014). The vast majority of the extreme sea level events are generated by moderate, rather than extreme skew surges, combined with spring astronomical high tides. We distinguish four broad categories of spatial footprints of events and the distinct storm tracks that generated them. There have been rare events when extreme levels have occurred along two unconnected coastal regions during the same storm. The events that occur in closest succession (<4 days) typically impact different stretches of coastline. The spring/neap tidal cycle prevents successive extreme sea level events from happening within 4-8 days. Finally, the 2013/14 season was highly unusual in the context of the last 100 years from an extreme sea level perspective.

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