

Interactive comment on “A century of sea level data and the UK’s 2013/14 storm surges: an assessment of extremes and clustering using the Newlyn tide gauge record” by M. P. Wadey et al.

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Analysing ~100years of tide gauge data at Newlyn (UK), the temporal characteristics and “clustering” of extreme water-level events is examined, placing the exceptionally “stormy” UK winter 2013-2014 in context. An excellent piece of research, well written and presented, on a very important topic that (I hope) should direct future coastal flood risk research.

Their research raises several questions which I hope our community will investigate in the future, and perhaps could have been considered in this work:

1. The authors find a strong link (but how statistically significant?) between the North
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Atlantic Oscillation index (NAO) and the clustering of extremes; however, what is the overall trend of the NAO in the last 100 years? For example, is the amplitude of NAO oscillation increasing or trending to more negative events (etc) This may help us understand what future patterns of extreme events may be like; i.e. should we expect more clustering of coastal flooding events in the future?

2. Essentially, the authors use a Peaks Over Threshold approach for their extreme value theory analysis with the threshold of a “1year return period”, but why choose this threshold? what would happen if a lower threshold or the R largest approach method was used?

3. The NAO is typically being used to describe extreme water-levels (and for good reason - as the authors point out); however, what about other measures of weather patterns in the northern Atlantic (which the authors do elude to); for example - what would the comparison be for clustering of extremes to factors such as: AO (Arctic Oscillation), Northern Annular Mode (NAM), or the Atlantic Multi-decadal Oscillation (AMO)?

4. In a global context, do we see an increase in the magnitude and frequency, and clustering, of extreme water-level events?

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