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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.

Anonymous Referee #1

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General comments:

This research examines 100 years of extreme sea levels at the Newlyn tide gauge (UK), assessing the magnitudes and temporal clustering of such events. By doing so, the events experienced during the 2013/14 season are placed within a historical context, and wider patterns in extreme sea levels are discussed. The paper is well written, with clearly defined aims and suitable methods with which to meet them. The importance of properly understanding the calculation of return levels and their uncertainties through time is clearly highlighted, with examples, providing valuable supporting evidence to similar findings from previous research in the region. The examination of the event clustering at Newlyn is thorough and attempts to indicate mechanisms that explain the

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patterns found in the record. This area of research is relatively new and is of real value, particularly to those interested in flood risk. The findings presented in this research provide a useful introduction / case study to the issue, upon which further research should develop.

Specific questions:

1) The clustering presented is said to be significant, and while some example are given (e.g. P2005 L2) I agree with a previous comment in this discussion (see the post by J. Williams) regarding whether the statistical significance could be more strongly indicated to show that we would not expect to see this by chance.

2) Figure 5 is useful for inferring visually the mechanisms that might be behind the results presented (as stated P 2008 L 24), and attempts have been made to describe anomalies (e.g. P2009 L17). Is it possible to go further and provide an analysis that clearly demonstrates the strength / significance of the relationship between the NAO / tidal modulations and the clustering observed for instance?

Technical comments:

P2001 L16 - 'Directly' P2008 L25 - 'why a certain season...' P2009 L17- 'and the exceptional number of...'

Interactive comment on Ocean Sci. Discuss., 11, 1995, 2014.

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