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Comment on nhess-2021-118

Anonymous Referee #2

Referee comment on "Distribution of coastal high water level during extreme events around the UK and Irish coasts" by Julia Rulent et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-118-RC2>, 2021

DISTRIBUTION OF COASTAL HIGH WATER LEVEL DURING
EXTREME EVENTS AROUND THE UK AND IRISH COASTS.

Abstract:

P1L7 - Does the 7.7% refer to 90th %ile waves or surges or both?

Don't see any key words, but 'Ireland' might be a good one since its included here

Intro:

P1L18 - Worth mentioning that 2013/14 storms were particularly large and that the £592.1 million of damage is presumably a maximum rather than typical? I know this is made clear later on, but adding something like "during the exceptionally stormy winter of 2013/4..." would work here.

Also, were there flooding and damage reported then on the western Irish coast?

Seems as though there should have been with 14m waves!

Be good to add these cases in as well since Ireland is being resolved.

P2L27 - "increase in the future"

P2L27 - Since mentioning other factors related to coastal flooding here, I think it would be good to mention

the risk of compound flooding in estuaries from TWL and high river flows.

P2L32 - Pleasee clarify what you means by "residuals"

Methods:

P3L65 - Were rivers included in the model runs? Please clarify

P3L70 - I'd expect that the min 10m model coast would mean that your results are on the conservative side?

Also in terms of timings relative to the tide, the timing of HW can shift through the intertidal, e.g in

long estuaries, meaning that, for instance, an extreme Hs occuring an hour before HW at the coast of the

UKC4 model might occur at HW further inshore.

These points could be added.

Results:

A lot of the text here is written in present tense, whereas past tense seems more appropriate to me.

Fig2 - Nice figure.

Should the overlapped shading ending at 35 hrs actually end at 34 hrs, to reflect the end of teh surge >90th %ile?

Also might be clearer if the wave panel shades only waves >90%, the surge panel only surges >90%, and the overlap

between waves>90% and surges>90% is shown only in the tide panel below?

P13L115 - A note that Hs in Fig3 is reduced in a few spots in east/north.

Fig5 - could a more distinctive colour scale be used, and the outer black line removed?

This would make the figure clearer I think.

Also noticed that the 2013/14 surges on SE coast were 'normal' (Fig-4b), but the %ages in Fig5b in SE were high?

A breif discussion on this would be good.

Discussion:

Generally excellent.

P15L212 - In the future...

Conclusion:

P16L232 - When 90th-percentile waves, surges and tides co-occurred, what/where was the flooding impact?