

## ***Interactive comment on* “Study of the threshold for the POT method based on hindcasted significant wave heights of tropical cyclone waves in the South China Sea” by Zhuxiao Shao et al.**

### **Anonymous Referee #2**

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The manuscript “Study of the threshold for the POT method. . .” describes the evaluation of statistical methods to ascertain extreme value wave heights relating to tropical cyclone waves in the South China Sea. The paper is focused on the Peaks Over Threshold method, and accurately defining the cut-off (lower bound) for the extreme value wave heights. The paper is generally well written and well researched in terms of contextualizing the study in relation to existing relevant work.

However, as a general comment I would say this is a very dense paper, which focuses on a particularly specific topic. The paper has some repetition and would benefit from being thinned out considerably so the core relevance, results and impacts of the work

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are made clearer. Some paragraphs are very long and could be split down by a factor of two or three. To this end, the paper would benefit from at least one figure up front to break up the text and provide some background on the geographic area.

The overall concept may be of general interest to readers of NHESS but the level of detail is not, and in some places it reads too much like a report than a research paper. The “so what” of the research needs to be better addressed in terms of applications to other work.

I feel the analysis is over-complicated somewhat. Have the authors given any thought to the notion that defining the lower bound wave height for the POT analysis may be as simple as locating where the wave height distribution deviates from a Rayleigh-type to some form of Generalized Extreme Value Distribution? If this is not the case, why not?

Can the authors provide a better definition for “when the tropical cyclone is close to the coast” and “when the intensity is high”. Were there distance and intensity thresholds used for this analysis?

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