

## ***Interactive comment on “The wave spectrum in archipelagos” by Jan-Victor Björkqvist et al.***

### **Anonymous Referee #1**

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Review of "The wave spectrum in archipelagos" by Jan-Victor Björkqvist, Heidi Pettersson, and Kimmo K. Kahma, manuscript os-2019-59

#### General Comments

This is an excellent paper, adding new observational insights into wave fields in archipelagos, adding substantial new insight to an already large volume of wave observation literature. Well done!

#### Specific Comment / questions

Page 5, section 2.3.1: In computing wave parameters from the spectrum, do the authors use a parametric tail, or is the integration stopped at the highest frequency of the observations. See also Page 3, line 16.

Page 7, line 13: Very small wave heights are not used, but in Table 1 mean wave

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heights in the sheltered locations is still as small as 0.05m. Can such small mean wave heights in the sheltered areas be trusted?

Page 10, lines 15-18: How did the authors concluded that peaks in the spectrum were due to refracted wave components?

Page 23, Section 5: I enjoyed the discussion of defining a representative frequency. It seems to me however, that the focus is mostly on getting a table parameter. Coming from an operational / application side, the usage of the parameter should be considered too (erosion, loads, roughness, etc.).

Page 26, Section 6: The data selection results in wind sea presence in all cases. This focus on wind seas needs to be repeated in the Conclusions.

#### Technical Correction

Page 3, line 8: Add text in red “While observations at 12 out of 14 ...”

Page 3, line 29: “. . . time series, used to compute a single wave spectrum.”

Page 7, line 16; please confirm that the 80th percentile is relative to the entire time series at the given location.

Page 14, Table 4: Labeling of panels is not consistent. Why is (a) labeled d.o.f, whereas all other panels are d.o.f. too?

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