

Interactive comment on “The “shallow-waterness” of the wave climate in European coastal regions” by Kai Håkon Christensen et al.

Anonymous Referee #1

Received and published: 27 February 2017

In this paper authors identify the fraction of energy that is affected by interaction with the bottom. They found that it depends on the mean wavelength (I would say this is obvious), it can be large also far from the coast if the water is sufficiently shallow (which in practice is the case for the central areas of the North Sea). Even where water is deep (100m), shallow water effects can be occasionally present if waves are sufficiently long.

While the paper is well written, concise and methodologically clear (I mean that mathematical definition -see formulas 2 and 3- of r_n is clear, I have some difficulty to identify the real utility of this study. In my view authors should explain the practical relevance of a specific value of r_n . At a station where r_n has always values less than 5% can shallow water effects always be neglected? events with “high” (beyond which threshold?) values of r_n are poorly reproduced in the ERA-Interim reanalysis? these are examples of relevant questions, in my view.

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I suggest that the authors make more clear what are the practical implications of their results and whether they can offer guidelines for the interpretation of existing data and model simulations, e.g. in terms of accuracy of results, of the model setup and characteristics to be used in the different areas, on the necessity to account for wave-current interaction.

The title does not really reflect the areas effectively included in the study. In depth analysis is concentrated in the North Sea and the Celtic Sea. Very little information is delivered for the rest of the European sea, including shallow parts of the Mediterranean (Rhone Delta and north Adriatic), the Bay of Biscay and Baltic and Barents seas.

Interactive comment on Ocean Sci. Discuss., doi:10.5194/os-2016-100, 2016.

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