

Interactive  
Comment

## ***Interactive comment on “Self-Organizing Maps approaches to analyze extremes of multivariate wave climate” by F. Barbariol et al.***

**F. Barbariol et al.**

francesco.barbariol@ve.ismar.cnr.it

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We thank the Referee for the comments and advices that will certainly improve the quality of our work. Comments are reported below, followed by our responses (*italics*: Referee’s comment, **AR**: Authors’ Response).

*This work presents a very interesting approach to improve the existing tool to characterize and visualize multivariate wave climate (Camus et al 2011), introducing an extra step to put the eye (zooming) in specific areas of the trivariate space (Hs,Tm,Dir). In particular, the authors focus in extremes of Hs. I am very familiar with these techniques, and one of the most important issues is the correct definition of extremes and this work contributes to a better knowledge of extremes.*

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*However, it would be a pity not showing in this work the potentiality to describe extremes of a variable which is a function of the initial variables ( $H_s, T_m, Dir$ ). For instance, the authors could show the ability of the proposed method to describe the alongshore component of energy flux ( $F_y$ ) in shallow water (the authors could use some of the concepts explained in Reguero et al (2013) to propagate wave climate to local areas to shallow water), and use as objective function local  $F_y$ . In my opinion, this added work would improve the quality of the work enormously.*

**AR:** We agree with the Referee that showing a potential application of the proposed technique could be interesting for the readers. Therefore, following the Referee's advice we will include an additional section in the revised manuscript providing an application to the estimate of the alongshore component of the wave energy flux.

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Interactive comment on Ocean Sci. Discuss., 12, 1971, 2015.

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