

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

**Anonymous Referee #4**

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The paper “Self-Organizing Maps approaches to analyze extremes of multivariate wave climate (Barbariol et al.)” presents several interesting strategies to deal with extremes using SOM due to its visualization properties.

The best solutions seem to be the TSOM and POT-SOM. However, the POT-SOM presents the disadvantage of the extreme data discontinuity in order to reproduce the time series and probability density. Both methods require working with two SOMs. Have been analyzed if a SOM of a higher size (e.g. 25 x 25, more clusters than two SOMs of 13x13) might detect extremes with a similar range of variation of Hs? A preselection using MDA to avoid many clusters in areas with high data density could have a more significant effect in a SOM of a higher size.

In the case a smaller of number of centroids is needed for a following application, a  
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post-classification could be applied to obtain a smaller number of clusters. For example, a k-means algorithm could be applied (see Solidoro et al., 2007).

One suggestion is not used “BMU” to refer to centroid, prototype. BMU is “the neuron whose weight vector is the closest to the input vector” during the training process and in the final classification. BMU is a term related to each input data.

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