

Interactive comment on “Statistical trend analysis and extreme distribution of significant wave height from 1958 to 1999 – an application to the Italian Seas” by G. Martucci et al.

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Received and published: 22 October 2009

Again we wish to thank Reviewer #2 for bringing up questions that can contribute to make the MS clearer.

On the break issue, we reproduce here the text we used for replying to Rev. #1: We agree that the ERA-40 wind fields are known to have some limitations (namely, underestimated for medium to large values) especially in enclosed areas. On the other hand, ERA-40 dataset constitutes one of the most advanced product when dealing with long-term series, and anyway even LAM have their own limitations. Consequently, we tried to overcome this comparing -for the overlapping years- the ERA-40 results with time-

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series calibrated by satellite data, as described in Cavaleri and Sclavo (2006). The procedure to make the time and space scales of model data and satellite observations compatible is similar to that followed by Caires and Sterl (2005).

For what concerns Reviewer comments on the extreme value analysis: We thank the Reviewer for his suggestions on the shape parameter, that allowed us to double-check our MS; indeed, what the Reviewer suggested is what we have been following, and we were then surprised to see his comment. After having double-checked the text, however, we realize that the written text was indeed leading to confusion, and not explaining the most appropriate way to proceed (which is, correctly, the one suggested by the Reviewer). Indeed, citing from our manuscript, Section 3.4 page 2016 line 23, and page 2017 lines 1-2: "The A and B coefficients are determined using the linear least square methods, whereas the shape parameter Gamma assumes the values $\Gamma = 0.75, 1.0, 1.4$ and 2.0 (Goda, 1997)." We were mistaken about the shape parameter. As a matter of fact, Gamma is chosen amongst the set of values $0.75, 1.0, 1.4$ and 2.0 by minimizing in a least square sense the difference between the wave dataset (ERA-40) and the modeled one (represented by the Weibull and Frchet). This is done for each distribution and the best gamma-value is then stored. The best gamma-values are used into Weibull and Frchet distributions and only at that moment A and B are found by using the linear least square method. The limited spread of the confidence interval is most likely due to the threshold used at 50th percentile, that is therefore enabling us to consider a large amount of data and leading to a smaller statistical error. We would therefore certainly address and amend this lack of clarity in the revised version of the manuscript.

Interactive comment on Ocean Sci. Discuss., 6, 2005, 2009.