Review on paper NHESS-2013-316
A comparison of the measured North Sea Andrea rogue wave with numerical simulations
by
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The paper is aimed at showing that the coupling of a spectral wave model, the WAM model, with a nonlinear phase resolving numerical model based on the High-Order Spectral Method, is interesting to investigate extreme wave events such as rogue waves. In this respect, the results of the numerical simulations are compared with in situ measurements (Ekofisk field).

Even if the suggested idea is interesting, I would like to express reservations on the procedure. The problem of coupling a linear model with a nonlinear model poses a problem. The initialization of a nonlinear code with linear solutions generate spurious mode which are non-physical. What is the impact of these modes on the further evolution of the waves? To avoid this problem one needs to use initial data from bi-spectra or to develop some method to relax the initial linear solution to the nonlinear one. A discussion on this aspect is desirable.

A detailed quantitative comparison of the in situ measurements and numerical results is missing in the paper. I do not see in figures or tables this direct comparison. This point must be clarified.

Herein the HOSM is applied within the framework of uniform finite depth. Are the authors sure that there is not effect of variable bathymetry on wave evolution? Can they justify the approach of uniform depth? When bathymetry is space dependent, numerical codes allowing variable depth are more appropriate such as the numerical model developed by Fructus & Grue (JCP, **222**, 2007).

The above comments raise the following question. What is the impact of using linear initial conditions and assuming a constant depth on the accuracy of the present results?

Tomita (2009), Magnusson & Donelan (2013) and Krogstad *et al* (2008) are not in references.

The paper needs a revision before to be acceptable for publication in the NHESS.