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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Wave climate and storm activity in the Kara sea" *by* Stanislav Myslenkov et al.

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The authors are grateful to the referee for the hard work with manuscript and significant comments. The article is a very large, so a lot of technical information was not included in the text.

About Major Comment #1 (It is the same with Referee #1) : This work was started at 2016, and at that time we used the newest version of WW3. We made sensitivity tests with all available parametrization, including the interaction of ice and waves. Model results was compared with several buoy stations in the North Atlantic, the Norwegian Sea, the Barents Sea. But the ST1 scheme was the best choice based on Bias, RMSE and R. In the Kara Sea the direct wave measurements practically absent, and we use

all with is available for us. We can include in the paper the comparison of model results with Saral and Sentinel satellites directly for the Kara Sea. We can include some sensitivity tests with different configuration (ST4, ST6) from 6.07 WW3 but I believe that the storm statistics will not changed.

About Major Comment #2:

A comparison of the different functions with the empirical data showed that the best approximations for the storm recurrence was the Pareto distribution. We have the draft figures of analysis of several function (in attach Gumbel distribution). We have not inserted these estimates into the text because the article is very large. We can include 1 figure with different functions.

About Major Comment #3: We agree with the most part of Referee comments which refers to Grammatical issues. Here I can answer to several disputable comments: Minor Comment #3: L27 - It means that 99% of empirical points lie on the Pareto distribution curve and do not go beyond the confidence interval.

Minor Comment #5: We have tried to put the links to all the most relevant studies regarding the study of wind and waves in the Kara Sea. There are few works directly related to our research, but we decide that more links is better to paper visibility. Minor Comment #7,8,9 - you are absolutely right, but the modelers often use only model documentation and do not read the original source. We will fix it. Minor Comment #11 - this is for a wide range of readers, because for people it is hard to understand the model definition of SWH. Minor Comment #12: "wave heights of 1% and 3% probability of exceedance" - it is like a SWH (which is around 12.5-13% probability), but more extreme, like a Maximum of single waves in package. Wave heights of 1% - it is height of 1 wave from 100 single waves from calculation period (in our case 30 min model step). Minor Comment #13 - we have some problems with open publication of data. It was more stations, but we can not publish pictures. We will clean the manuscript. Minor Comment #15: - yes, 1 time for period 50 years Entire the Kara Sea

Minor Comment #16 - We use only average wave period (WP) Tm02 and mean wave length (WL). We will add the description at chapter 2 Minor Comment #20: If the the wind blows during 2 days - it cause the waves with SWH more than 4 m. It is a one storm event and it is no any links to to 9 hours between storm events.

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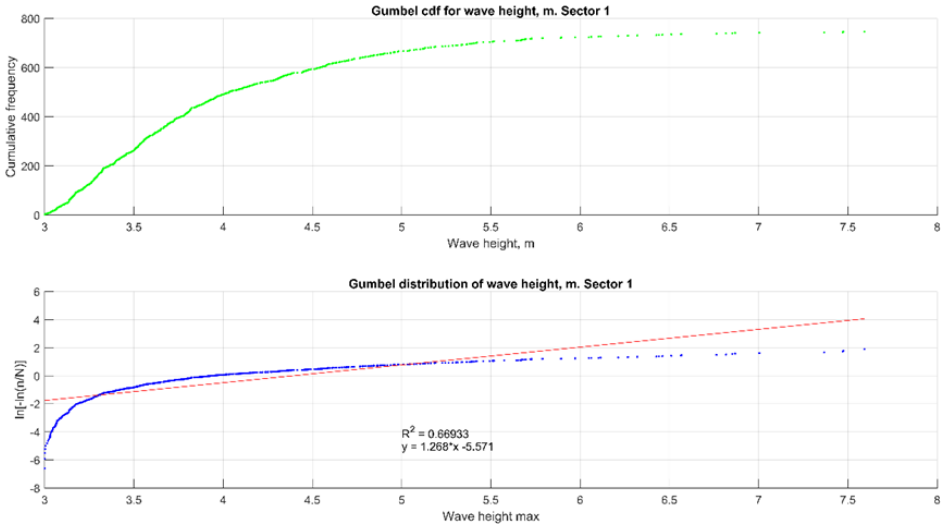

Fig. 1.