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Interactive comment on "Exceedance frequency of appearance of extreme internal waves in the World Ocean" *by* Tatyana Talipova et al.

Y.A. Stepanyants (Referee)

yuas50@gmail.com

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The refereed paper is devoted to the statistical estimates of frequency of appearance of internal waves of high amplitudes in different regions of the World Ocean. It is stated that according to the statistical analysis, the experimental data evidence that the observed exceedance probability of large-amplitude internal waves in the majority of cases can be described by the Poisson distribution function, although for small-amplitude internal waves the Gaussian statistics is more appropriate. The analysis was performed for several zones of the World Ocean on the basis of existing data of field measurements of amplitudes, speeds, and temperature recordings.

The paper is suitable for publication in the journal with minor revision. My remarks and

suggestions are as follows.

1) My general remark is about the statistics. According to the definition, the Poisson statistics is applicable to discrete specific types random quantities, see, for example, the Wikipedia: "In probability theory and statistics, the Poisson distribution is a discrete probability distribution that expresses the probability of a given number of events occurring in a fixed interval of time or space if these events occur with a known constant rate and independently of the time since the last event." Can authors clarify, whether such statistics is applicable to continuously distributed random quantity such as wave amplitude? If there are any physics or any other reasoning why the Poisson statistics is the most appropriate for large-amplitude waves, whereas for small-amplitude waves the Gaussian statistics is more appropriate? Or this is just an empirical fact, and the Poisson distribution function is a convenient interpolation of data?

2) There are several awkward sentences in the text which should be rephrased. In particular, on page 8, line 19 – 20 (see remark in the attached manuscript). Some more remarks are shown on the margins of the manuscript; they are self-explanatory.

3) I am certainly not a great expert in English, but it seems to me that the text should be polished.

Yury Stepanyants.

Please also note the supplement to this comment:
https://www.nonlin-processes-geophys-discuss.net/npg-2018-12/npg-2018-12-RC2-supplement.pdf

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