

## ***Interactive comment on “Non-linear Effects in Electromagnetic Wave Activity Observed in the RELEC Experiment on-board Vernov Mission” by Mikhail I. Panasyuk et al.***

**Mikhail I. Panasyuk et al.**

bogovit@rambler.ru

Received and published: 13 February 2019

Authors are much pleased to referees for comprehensive and very useful remarks. According to these remarks we re-elaborated the paper quite significantly. All re-written parts of article are picked-out by yellow in the supplemented \*.pdf file. Below we listed referee's remarks and our commentaries.

English The English of this paper is too bad to understand, sometimes very difficult to understand.

We try to improve English

C1

This paper is composed of two parts: One is the technical part describing the satellite payload, particle monitoring systems, and wave experiments, and the other, an example of scientific observation results. Both parts are not satisfactory for me and the possible readers. Introduction seems to emphasize the importance of this satellite mission, with the main topic being the precipitation of magnetospheric particles, but there have not been presented any results of particle precipitation in the text.

We re-wrote Introduction. Discussion about precipitation was omitted otherwise more detailed analysis of wave phenomena was added.

If you want this paper as a technical paper, you have to provide us with the detailed description of the equipment of the satellite mission. Then, when you want to publish a purely scientific paper, you have to delete the technical part (just refer to your previous technical paper) and you have to concentrate yourselves on the results of particle precipitation and the associated wave effects. Instead if you want to give us a new VLF phenomenon, you are highly required to provide us the much more detailed and extensive discussion on the new wave phenomena.

We cut the Section 2. Only necessary description of wave instruments was leaved.

However, we cannot find any convincing evidence on the nonlinear wave activity (more detailed analyses on three-wave process).

We added into the Section 4 “Discussion” analysis of non-linear wave activity based on so-called bi-spectra and discussion of its results.

Further, an association of this new wave with seismic activity is not either convincing.

We added more detailed analysis as of association of observed new wave with seismic activity as of nonlinear wave activity into the Section 4 “Discussion” (see our commentary on the remarks of Referee 1).

Please also note the supplement to this comment:

C2

<https://www.ann-geophys-discuss.net/angeo-2018-119/angeo-2018-119-AC2-supplement.pdf>

---

Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2018-119>, 2018.