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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Estimate of ULF electromagnetic noise caused by a fluid flow during seismic or volcano activity" *by* V. V. Surkov and V. A. Pilipenko

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Below are point-by-point responses to the Reviewer 3 comments.

(1) 1. Introduction (page 6478)... In what follows the Reviewer suggested to add 16 citations of papers by Vallianatos et al. The detailed review of the history of earthquake prediction studies is far from the scopes of our paper. That is why we have referred the interested reader to the review by Molchanov and Hayakawa (2008) with very comprehensive references (see next point).

(2) 2. Page 6477, line 3. At this point the reviewer recommended to add four citations

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by Vallianatos et al. We are going to include in the revised text of our paper the latest one from these citations (F. Vallianatos, A. Nardi, R. Carluccio and M. Chiappini, "Experimental evidence of a non-extensive statistical physics behavior of Electromagnetic Signals emitted from rocks under stress up to fracture. Preliminary results." Acta Geophysica, 60(3), 894-909, 2012).

(3) 2. Page 6477, line 17. The reviewer recommended us to cite any paper by Hayakawa et al. which deals with Z/G ratio. The following paper has been included in the reference list: Hayakawa, M., Kawate, R., Molchanov, and O. A., and Yumoto, K., Results of ultra-low frequency magnetic field measurements during the Guam earthquake of 8 August 1993, Geophys. Res. Lett., 23, 241-244, 1996.

(4) 3. Page 6477, line 23. The Reviewer recommended us to cite and comment the paper by Tzanis et al. (2000). Unfortunately we cannot touch all the aspects related to the earthquake predictions since our paper deals with only aspect of this problem while the interested reader is referred to other papers for a detailed review (e.g., Molchanov and Hayakawa (2008)).

(5) 4. Page 6478, lines 18-19. The Reviewer recommended us to cite four papers by Vallianatos et al. We must repeat that our paper is not a review and the full list of references can be found in other papers.

(6) 5. Page 6481, line 20. We have inserted symbol ïĂij ïĂ¿ for average value of the electrokinetic current density in Eq. (5)

(7) 6. Page 6485, line 5. Justify the validity of the approach using some order of magnitude estimation with data from magmatic champers. The critical value of the channel cross-section S* ïĆż 0.1-1 m2 has been estimated at page 6484, line 10. This value is much smaller than the typical cross-section of both magmatic chamber and throat (about 1-10 km2) [Kopytenko and Nikitina, 2004a, b]).

(8) 7. Page 6489, lines 3-8. "One of the weakest point.....has been used". The

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reviewer 3 wrote: “I dong agree with this view. All the references proposed support that there is a science motivation and I propose the authors to modify this statement properly.” We have cancelled this and next phrases and added the following sentence: “For a search of seismic-related ULF signals just standard magnetic observations can be inapplicable because of small value of signal-to-noise ratio.”

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 6475, 2014.