

Interactive comment on “The combined processing of geomagnetic intensity vector projections and absolute magnitude measurements” by Victor G. Getmanov et al.

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Received and published: 11 June 2019

On the manuscript V.G. Getmanov, A.D. Gvishiani, R.V. Sidorov “The combined processing of geomagnetic intensity vector projections and absolute magnitude measurements” This paper should be of obvious interest for the audience. Similar approaches are seldom implemented in practice of multicomponent data processing, although the provided mathematical technique for possible noise removal from magnetic data is not complicated, actually. The main idea of the technique is the combining of synchronized component and scalar time series from two magnetometers, functional minimization and local approximation construction. The paper includes a thorough description of

C1

the technique and the results of its testing on model and real data sets: the capabilities of the technique are displayed. However there are some issues to be clarified. 1) The introduction says: “The approach realized in this paper, based on the proposed method, provides the increase of accuracy of the measurements of the projections of the geomagnetic intensity vector” (page 1, line 22). A similar statement is included in the Conclusions section (page 8, lines 9-10) and in the abstract. But the accuracy of the measurements is determined mainly by the technical characteristics of the registering hardware (in our case – the characteristics of the observatory magnetometers). And the increase of the accuracy of the measurements can be reached only by the hardware upgrade, not by the data processing. The corresponding statements should be rewritten, so that the audience can understand that the main goal is the increase of the quality of the registered data, not the data accuracy, using the noise errors reduction. 2) In the manuscript, 1-second geomagnetic variational data sets are analyzed. The conclusion is made about the possibility of applying the technique on scalar and vector data of any origin if they are registered by a similar measurement system. Is it possible to apply the technique for the noise error reduction in some physical data with subsecond sampling? 3) There are some technical corrections that should be fixed: 3.1. Axis labels on Fig. 1 and 2 should be translated from Russian into English. 3.2. A brief description of line plots marked (1), (2), (3) etc. should be included in the captions for all figures.

Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss.,
https://doi.org/10.5194/gi-2018-31, 2018.

C2