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Geoscientific Instrumentation Methods and Data Systems
Discussions

Interactive comment on "Solving the orientation problem for an automatic magnetic observatory" *by* A. Khokhlov et al.

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The referee has made a few comments, the two major ones relate to:

1. It has to be noted that the idea to use the absolute measurements for solving orientation problem is not new - the similar approach was used previously to find the orientation of the DIDD magnetometer (Schott and Leroy 2001).

This comment has been considered and the indicated references introduced in the new version.

2. However, the low calibration error (approximately few nT) is obtained in assumption that the magnetometer parameters as well as the pillar position are very stable between the calibration campaigns. So, the proposed approach could be hardly applied for

solving the orientation problem in the case of ordinal flux-gate magnetometers widely used in the geomagnetic observatories.

This point has been also suggested by Jean Rasson. Here is the answer we provide: "It is true that we don't address the full problem. Note that, to our knowledge, no data allow to make any estimation of the pier motion and strain. Certainly some observers have made experiments (we did in Chambon la Foret observatory), but the results have not been published. Old unsolved problem. We can only build the best pillar and the most "rigid" apparatus. We stress this point in Discussion."

The 11 detailed comments have been considered in the new version. Two of them are more interesting and we provide detailed answers.

2. The referee's comment is relevant. It is possible to develop the theory taking straightforwardly into account errors on f. It makes the writing and formula longer and heavier. We preferred to present the simplified version, which is relevant, in this paper. We modified the text considering this comment.

6. The referee is right. We have tried to improve the presentation of the computation of the |?V|av and |?V|max

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