Interactive comment on "Automatic parameterization for magnetometer zero offset determination" *by* M. A. Pudney et al.

Anonymous Referee #1

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The authors have written an interesting and clearly structurated paper about the offset determination of magnetic field data measured in space. Although the paper deals mainly in discussing the methods of Leinweber et al. 2008 I recommend the publication of the paper. The authors applied the mentioned methods successfully and created some new recepies on the base of that mehtods. Using these new procedures in combination with statistical analyses, a powerful tools was developed to improve the magnetic field data quality of satellite data.

Nevertheless there are some minor issues listed below, which have to be improved before publication:

* page 248, line 2: "fast" should be deleted. And something like "and possibly transient filed jumps due to payload or satellite subsystem acitvities" should be added here.

* page 248, line 3: "offset" should be deleted. Reason: a "residual field" is a real field which is not compensated, e.g. a spacecraft field. An "offset" is a property of an instrument or a sensor, causing the instrument to display a non zero value while the real measured entity equals zero. But a "residual field offset" is a term which does not make sense in any case as two entities have been mixed which should be clearly separated.

* page 248, line 29: It is not exactly clear what is meant by "minimum compressional standard deviation" especially in comparison to "compressional variance of the magnetic field" Please give exact mathematical definitions. This entity is one of the key entities of the paper/discussion, therefore more details are needed here to help the common readership.

* In Fig 1&2 the positive and negative field moudulus Bmag is plotted. Plaese indicate in the Figure legend that this is +-Bmag, not only Bmag.

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