Interactive comment on "Harmonic quiet-day curves as magnetometer baselines for ionospheric current analyses" *by* M. van de Kamp

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I would like to thank both referees for their valid and very useful comments. I will soon upload a revised version, in which I will have taken all comments into account.

Below are specific replies to the comments.

Both referees:

The weblink to the ECLAT project is http://www.space.irfu.se/ECLAT/eclat-web/eclat_detail.html and to the Cluster Active Archive is http://caa.estec.esa.int/caa/home.xml I can include these links in the revised paper. However, note that both sites are still under construction, so all data may not be

available yet.

Referee #1:

In the revised manuscript, I will include a clearer description of what in this paper is defined as the 'disturbance field', and which contributions are expected to be removed (as part of the baseline).

I will include an estimate of the remaining errors. The largest errors will occur in some cases of strong equipment drift, as those variations can be much larger than the Sq variations. A worst-case error assessment can thus be made by estimating the portion of the strongest equipment drift (see e.g. Figure 10) which is not removed from the signal.

The jump baseline is a superposition of step functions; I will specify this in the revised paper.

Referee #2:

I will download some data from the Supermag website and compare them with my method in the revised manuscript. However, note that this can not be a full comparison, mainly because the data for which my method shows the most significant advantage, i.e. the data containing equipment effects, are not available from the Supermag website (presumably, those data have there been qualified as invalid). I will point this out in the manuscript.

In the revised manuscript, I will include a spectral analysis of: the long-term baseline, the diurnal baseline and the remaining disturbance field. This should make clear which frequency components are present in each of these.

I will describe the discontinuity detection software in more detail.

The interpolation is linear. I will specify this, and explain why this is good enough.

I will describe how the thresholds are chosen in Sections 2.3 and 2.4.