

Interactive comment on “Relation between the asymmetric ring current effect and the anti-sunward auroral currents, as deduced from CHAMP observations” by Hermann Lühr and Yun-Liang Zhou

Anonymous Referee #2

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This paper by Lühr and Zhou, is a reworking of champ data to look into the ground signatures of the asymmetric ring current in relation to the higher latitude auroral currents. They determine a number of aspects of current closure relating to storm time conditions (defined by Em) which are indicated by event and statistical analysis. The results will be of interest to the community. It is a clear account and presents a convincing statistical analysis. I recommend publication but have the following minor comments the authors may wish to consider. These are not critical on publication.

1. I would suggest the authors clarify better their meaning of the terms 'summer hemisphere'

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sphere' and 'winter hemisphere' in the abstract. The term is clear in the discussion but not perhaps when reading the abstract for the first time.

2. I wonder if Figure 1 can be made a little clearer. It is hard to grasp the first time.
3. The discussion of effects hinges on calculation of the total current. I realised this is discussed in detail in a previous paper, but since further assumptions have to be made, perhaps some indication on the possible error (e.g. missed current), depending on conditions and sampling, could be added.

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