

# ***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 Luehr 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  $E_m$ ) 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 hemi-

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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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