

Interactive comment on “A simulation study with a new residual ionospheric error model for GPS radio occultation climatologies” by J. Danzer et al.

Anonymous Referee #1

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Danzer et al. examined the capability of a new residual ionospheric error model with a 3-dimensional ionospheric model to correct higher order ionospheric residuals in global positioning system radio occultation data. The technique is valid and the manuscript is well organized. Only few minor revisions are required before its publication.

Specific comments:

1. The authors proposed a 3-D model, and however they only showed the mean banding angle profiles averaged over all longitudes at 0° geographic latitude in this paper. Therefore, the reviewer suggests that the title of the paper should include the term “equator” or it should be emphasized in the Introduction or Data set sections (e.g. page 1160, after line 7) that the model is only applicable to the 0° latitudinal band.

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2. The longitudinal variation in the ionospheric plasma density is significant near 0° geographic latitude even in the same local time. One of the reasons is that the geographic and geomagnetic equators are not overlapped, and the distribution of ionospheric plasma density is highly controlled by the geometry of geomagnetic field lines. Accordingly, the question is, how is the capability of the new model in different longitudes?

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