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Interactive comment on "High Resolution Vertical Total Electron Content Maps Based on Multi-Scale B-spline Representations" *by* Andreas Goss et al.

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The paper presents an interesting investigation, containing a good review of current state in global ionosphere maps production and a presentation of a promising technique for calculation of near-real time maps of high spatial resolution. The presented method to be used for RT applications and it would be better to describe in more details how much information should be transmitted to user and if its amount depends on space weather conditions.

I would also ask the authors to correct or clarify some parts of the article (P – page, L – lines):

P5L6: What kind of difference between Europe and Oceania is possible to see in fig.

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Discussion paper

9Left? Both regions demonstrates “smooth” VTEC.

P6, footnote: where is this reference in the text?

P7L18: DGFI-TUM abbreviation is not introduced properly

P7L9: Term “sampling interval” for latitude and longitude ($\Delta\lambda$, $\Delta\varphi$) is not really clear. Typically the term means an interval between measurements, but the authors use it for a model explanation. The term should be explained more carefully, especially since the used notation can be easily misunderstood as one for the resolution intervals ($\Delta\Lambda$, $\Delta\Phi$).

fig4. Notations $\Delta\Lambda$ and $\Delta\Phi$ are located badly since it looks like that q = $\Delta\Phi$ and p = $\Delta\Lambda$

P13L15-16: “. . . quality . . . decreases with the spatial resolution intervals”. Resolution intervals decrease or increase?

P17L17-18: Notation Is is not neither introduced nor explained.

P18L28 – P19L15. The sentence is not divided in a good way. Please reformulate.

P22L9: Linear interpolation gives no information about detailed structure of ionosphere and, I would say, only makes an illusion of higher resolution. I recommend to present real grid figures to show real quality of the model.

P22L13-15: The statement is not fully correct since e.g. Southern Pacific Ocean also does not contain GNSS station, but demonstrates the same standard deviation level as the region of Northern America.

P23L3: Are the indices 4, 3 over σ correct? Should not they be “5, 3”?

P23L4, 8: Both maps have the same resolution intervals, but different “sampling intervals”. Presentation of the “sampling intervals” here is more necessary, when resolution ones could be described outside of this MS products block.

P23L9-15. I recommend to use “symbol” instead of “digit” (here and further) since usually “digit” means a number. All the presented description is too complicated. I recommend you to explain it this way: “‘oABg’ where A is a temporal resolution (10 min(‘t’), 1 hour(‘1’) and 2 hours (‘2’) and B is high (‘h’) or low (‘l’) resolution.” Letters ‘o” and ‘g’ are the same for all your abbreviation. It is also not necessary to repeat the explanation in P25L7-11.

P24L16-17 and fig 10: Specify the independent stations names and show them by color in figure. It is not clear for me why do not you use only independent stations for validation. Why do not you take other 10 stations located close to the ones you choose?

P25L2: If some threshold was used, specify its value in the text.

P25L5-6. It would be much more representative to show total number and a number of the used coefficients.

P30L21: Phrase “Since To model. . .” is not clear.

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