

Interactive comment on “Vertical Ionosphere Delay Estimation using Zero Difference GPS Phase Observation” by Ahmed Elsayed et al.

Anonymous Referee #1

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The manuscripts present a model to estimate the Vertical Ionosphere Delays using Zero Difference GPS Phase Observation. The GPS Phase Observation observations from ten IGS stations are used. It is reported that the developed proposed procedure may be better than GAPS because it can estimate the ionospheric delays each thirty seconds whereas GAPS estimate the ionospheric delays each ten minutes. However, I do not recommend the publication of their manuscript for the reasons given below. Nevertheless, I encourage the authors to submit a more mature manuscript at a later stage. Major 1. The description of proposed model needs more details. Do the observations from all stations or one station is considered to develop the model?, Where is the procedure for cycle slip detection by the model and what are the elements that considered to construct the design matrix A. 2. How the equation (10) elements are con-

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sidered from the previous equations and you are considering sequential least-squares (least-squares) for solving the unknowns and in equation (11) weight matrix is considered. 3. Regarding Figures, there is no explanation is given except figure description in once sentence. 4. VIDE program means what, VIDE program suddenly come in to figures, from my observation VIDE program means proposed Code. 5. The average ionospheric Delay of each station of DOY 3, 2018 using the Proposed code is higher when compared to GAPS expect the locations of HERS, HRAO, MAT1 and METS. How the proposed model better than GAPS. Though you consider estimate the ionospheric delays each thirty seconds. Minor 1. Mention the web addresses or corresponding sources of the GAPS model. 2. When comparing observations and mode for several storms, it is needed to mention the station name at least in figures for quick understanding. 3. There are several minor typo and English mistakes. Example aberrate the terms, GPS, DOY,VIDE. Some time you are using Doy instead of DOY. 4. In Figure 2 : IGS station latitude and longitude not clearly visible. First mention the station station after use the station IDs. 5. In page 1 Line 15 “the ionospheric delay” the “T” must be the capital letter. Please see this king of simple mistakes.

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