

Interactive comment on “Climatology of ionosphere over Nepal based on GPS TEC data from 2008 to 2018” by Drabindra Pandit et al.

Anonymous Referee #2

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Authors present a solar cycle-long climatological study of the VTEC performance above Nepal region. Authors present different scale variabilities – from the diurnal patterns through seasonal and annual to the solar cycle ones. Authors also make references to the physical mechanisms beyond the different patterns. I would recommend publication after addressing few minor/moderate issues:

Authors summarise the general objective of the work as climatology over Nepal, that has never done before, on the other hand they point out that similar studies for the Asian region has been done before. Authors address those studies in discussion, but it would be worth to precise what is the Nepalese climatology research area in this field during the manuscript objective formulation.

p. 5, l. 4 – Authors’ statement about GIMs resolution (only 1 or 2 hours available) is
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inaccurate – there are 15-minute GIMs available in the IGS repository (e.g. UQRG).

p. 6, l. 7-8 and figure 3b – Authors distinguish diurnal patterns of VTEC variability into parabolic and wave-like ones, however the separation of years 2016 and 2017 is questionable – in Figure 3b the profiles for 2016 and 2017 look pretty similar.

p. 6, l. 14 – Authors discuss minimum during solstices, but address only January solstice.

The results of monthly and seasonal variability analyzes seem to lead to convergent conclusions. It should be checked and properly addressed, if there are any differences revealed between monthly and seasonal patterns.

The very last conclusion of the manuscript about Nepal-specific behavior of certain seasonal variabilities seems a bit exaggerated, as the manuscript does not provide or address any exact results for the other regions for a clear Nepal-specification distinction.

In the equation 3 and its description the elvation angle symbol looks like logical set membership operator rather than Greek epsilon.

Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2020-82>, 2020.