

Review of ANGIO Manuscript

Quasi 10-day wave modulation of equatorial ionization anomaly during the Southern 1 Hemisphere stratospheric warming of 2002

Xiaohua Mo and Donghe Zhang

Using the location and TEC of EIA crests derived from GPS station observations and GIMs, the authors report on a quasi 10-day periodic variability in northern and southern EIA region in Asian sector during the 2002 SH SSW. Around the same time period, this quasi 10-day oscillation is also seen in the polar stratospheric temperature and EEJ, which is absent and weak in Kp and F10.7 index, respectively. Given previous work showing a strong quasi 10-day planetary wave with zonal wave numbers $s=1$ extend from the lower stratosphere to mesosphere and lower thermosphere the authors infer that the quasi 10-day variation in the EIA region should be ascribed to enhanced 10-day planetary wave in lower atmosphere associated with SSW.

General comment:

This manuscript contains some interesting results and I find it improved in this revised version. In particular I find the results of the 10-day modulation of the TEC during the 2002 SH SSW event compelling. A major source of concern is lack of sufficient evidence on potential connections between the 10-day periodic variation of EIA crests and SSW/EEJ. Further statistical analysis that demonstrates this connection is required before publication can be recommended.

Other comments

- The abstract is not sufficiently developed.
- Line 23 'Norther Hemisphere (SH)', is this a typo or the authors mean both NH and SH?
- Line 54: 'The researches', change to 'Research'.
- Unit missing in the legend of Figure 5.
- Line 166: 'A series of studies', which ones? Include appropriate references.
- Line 208-221: While the observed 10-day oscillation may be ascribable to the SSW the manuscript presents insufficient evidence to justify this claim.