

Response of ionospheric parameters to Geo-magnetic activities in Hainan

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In this study, responses of low-latitude ionospheric parameters to geomagnetic activities are investigated by analyzing the ionospheric parameters obtained with DPS-4 digisonde in Hainan Observatory from 2002 to 2005. The results are as follows. Responses of the ionospheric parameters to geomagnetic activities are season and local time dependent. In equinox, geomagnetic activities of the preceding 0-24 hours make foF2 decrease pronouncedly between 0200-0300LT, especially the preceding 6-15 hours magnetic activities; geomagnetic activities occurred between 2100-0200LT make foF2 increase pronouncedly from 0700LT till 0200LT of next day, especially, 0900-1100LT and 2100-2300LT and it can last several days. In summer, the geomagnetic activities cause foF2 decrease pronouncedly after midnight and increase during 0800-2100LT. Negative phase ionospheric storms after midnight are remarkable only for the preceding 0-15 hours geomagnetic activities, but pronounced positive phase ionospheric storms can last several days. In winter, generally geomagnetic activities make foF2 decrease from midnight to 0500LT, especially 0300-0400LT, and increase during other time period, especially 0800-1100LT. The results are near the same for the geomagnetic active index Kp and Dst. Responses of other ionospheric parameters to geomagnetic activities are also investigated.