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Investigation of plasma bubble occurrence characteristics over China

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Plasma bubble occurrence characteristics during the solar maximum and minimum years (2000-2004) are investigated using the TEC data collected by a GPS receiver network, which operated at mid and low latitude of China. An analysis of the observations revealed that the irregularities mainly occur during equinoctial months at solar maximums, and are rarely observed at solstice, especially for solar minimums. The observed large-scale plasma depletions during low occurrence seasons are found to be associated with the geomagnetic storms. In this paper, three cases selected from the solar minimum year (2004) are used to study the effects of geomagnetic storms on plasma bubble occurrence, where they act as an initiator during low occurrence seasons.