



Statistical investigations of ionospheric parameters over Wuhan

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Some Wuhan ionospheric parameters from historical vertical sounding and new digital ionosonde measurements are statistically studied to investigate their climatological features. Daily averaged solar EUV data from SEM/SOHO measurements from 1996-2005 and solar proxies are also collected for analyze the solar activity feature of NmF2. Results show a nonlinear relationship of NmF2 with solar EUV and solar proxies and suggest that the saturation effect in NmF2 can not be simply attributed to the nonlinear representation of EUV by F107. We will also present the climatological features of the profile parameters (B0, B1 and scale height) over Wuhan. For example, It reveals that, the alpha-Chapman scale height and B0 over Wuhan present variations of diurnal, seasonal, and solar activity. For example, (1) the alpha-Chapman scale height is consistently higher in summer than in winter by day; (2) The values of B0 have distinct diurnal, seasonal and solar cycle variations, while B1 changes little with season; (3) Observed B0 is in good agreement with B0-Gul option of IRI, and B1-Tab of IRI is consistent with our observations. This research was supported by the KIP Pilot Project (kzcx3-sw-144) of Chinese Academy of Sciences, National Natural Science Foundation of China (40574071) and National Important Basic Research Project (G2000078407).