

Long-term changes in the ionosphere parameters deduced from long-term EISCAT UHF radar observations

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Incoherent scatter radar is the most powerful ground-based instrument for the study of various ionospheric processes and can give the vertical profile of basic ionospheric parameters (electron density, electron temperature, and ion temperature). For the previous study, using all available CP1 data taken by the EISCAT UHF radar at Tromsø (69.6N, 19.2E) between 1984 and 2004, we demonstrated climatological variations of the parameters in the F region including diurnal, seasonal and altitude variations and the solar cycle under the quiet geomagnetic conditions (A_p index is less than 10.). In this study, we present long-term changes (trends) of the parameters over the last two decades on the basis of the long-term EISCAT database, and examine some possible causes for the observational trend results.