

Statistical MLT-distribution of conductances, electric fields, and Joule heating rate at high latitudes

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The continuous one-month EISCAT UHF radar measurement in Tromsø (cgmLat 66.1°) in March-April 2006 is analysed with a 2-min resolution to get reliable estimates of the ionospheric electric field. The same resolution is utilized in the calculation of height-integrated conductivities. The ionospheric Joule heating rate is then estimated from $\Sigma_p E^2$. In this work, we have no measurements of the neutral wind velocity, so neutral gas dynamics is not taken into account. The calculated parameters in the pre-noon, post-noon, pre-midnight, and post-midnight sectors show very different characteristics. The characteristics reflect the different magnetospheric properties at different MLT sectors as well as variable ionospheric response. These effects will be discussed.