

Solar activity dependence of ion upflow in the polar ionosphere

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We have investigated solar activity dependence of ion upflow by using field-aligned observational data obtained with the EISCAT Tromsø UHF radar between 1984 and 2004. In this talk, we reported relation between the solar activity dependence of the ion upflow and physical parameters such as electric field and electron temperature. The physical parameters correspond to frictional heating and auroral particle precipitation which are considered as one of energy sources of the ion upflow. We discuss how the variation of neutral density in the thermosphere and ion-neutral collisions affect relation between the ion upflow and frictional heating and particle precipitation.