Auroral ion outflow: low altitude energization

K A Lynch

Department of Physics, Wilder Lab, Dartmouth College, Hanover, NH

Ion energization and transport in the auroral zone is an interesting plasma physics question that is being addressed by a number of different measurements. Here we look at measurements from low altitude sounding rockets of the very beginnings of this energization. The Amicist and Sierra nightside sounding rockets include multiple-payload observations of ions and electric fields; the Scifer, Caper, and recent Sersio missions on the dayside have a wealth of ground-based observation, including EISCAT altitude profiles on Sersio. From these multiple observations we can draw conclusions about the relative significance of various energization mechanisms, and begin to study the relationship between ion outflow and auroral dynamics in general. In this talk we focus on observations of ion energization in regions of low frequency electric field activity. The microphysics of the energization appears to be independent of region, but the similarities can be masked by differences in morphology, and by instrumental effects.