

## The observation of electron temperature and density in the ionospheric E region and the energetics of the Es layer

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The electron temperature and density was measured by means of rocket-borne glass-sealed cylindrical Langmuir probe. Detail analysis of the data shows that  $T_e$  in the Es is several hundred K higher than the ambient  $T_e$ . There are few studies about the energetics of the Es. We will report the final result about the analysis of the data obtained by the experiment and estimate the magnitude of the electric field by assuming that the elevated  $T_e$  is due to the Joule heating.