

Reimei observations on ion acceleration and its correlation with the auroral emissions/electrons and the ionospheric conditions

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One of the most important issues in the Reimei observations is the research of the ionospheric ion acceleration because the Reimei altitude is quite suitable for the initial ion acceleration process causing/relating to the ionospheric ion outflows observed in the Earth's magnetosphere and magnetotail. From the viewpoint of the orbit characteristics of Reimei in the noon-midnight meridian below 670 km, it is obvious that the Reimei observations bring us a unique opportunity to investigate very pure characteristics of the TAIs (Transversely Accelerated Ions), which are not affected by the other acceleration mechanisms, like the parallel electric field acceleration. While the database of the Reimei observations demonstrates that the TAIs do not have any fine correlation with the auroral emissions and Inverted-V electron precipitations, the lower-energy bursty electron precipitations sometimes shows a relationship with the TAIs though the correlation is not clearly high. We present the latest results of the Reimei measurements and coordinated observations with the EISCAT radar in this paper.