

High-resolution auroral acceleration signatures within a highly dynamic onset arc

*Tetsuo Motoba¹, Masafumi Hirahara¹

1.Nagoya University

Auroral acceleration processes and structures related to onset auroral arcs remain poorly understood mostly due to the lack of adequate observations. The Reimei spacecraft has so far offered the best possibility to perform detailed high-resolution particle measurements conjugate to detailed fine-scale optical measurements with a small field of view. In this study we present simultaneous conjugate Reimei observations of fine-scale optical and particle signatures of a structured, highly dynamic onset arc that occurred on 16 March 2006. The favorable Reimei observations for the active arc crossing within a few seconds provide a detailed picture of the relationship between the structuring arc emissions and the causal particle acceleration processes.

Keywords: aurora