



## **Observations of an auroral streamer in a double oval configuration**

**O. Amm** (1), R. Nakamura (2), T. Takada (3), K. Kauristie (1), H. Frey (4), C. Owen (5), A. Aikio (6), and R. Kuula (6)

(1) Finnish Meteorological Institute, Arctic Research Unit, Helsinki, Finland, (2) Space Research Institute, Austrian Academy of Sciences, Graz, Austria, (3) Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Sagami-hara, Japan, (4) Space Sciences Laboratory, University of California, Berkeley, USA, (5) Mullard Space Science Laboratory, Dorking, United Kingdom, (6) University of Oulu, Oulu, Finland  
(Olaf.Amm@fmi.fi)

During the late evening and night of September 14, 2004, the nightside auroral oval shows a distinct double oval configuration for several hours after a substorm onset at  $\sim 1845$  UT. This is observed both by the IMAGE satellite optical instruments, and by the MIRACLE ground-based instrument network. While the two auroral regions are otherwise disconnected and slowly drifting equatorward with comparable speeds, at  $\sim 2117$  UT an auroral streamer is detected by IMAGE over northern Fennoscandia, which connects the two regions for a few minutes. This streamer causes a distortion in the equivalent current patterns seen by the MIRACLE network which indicates that also current is transferred between the two regions. Further, the streamer moves over the EISCAT beams which allows us to deduce the electron density structures and conductances associated with it in detail. The magnetic footprints of the Cluster satellites are located at the streamer's eastern flank, where Cluster measures a bursty bulk flow in the magnetotail. We will compare in detail the electrodynamic and the ionosphere-magnetosphere coupling of this late recovery phase streamer with previously studied expansion phase and early recovery phase streamer cases.