Geophysical Research Abstracts
Vol. 16, EGU2014-3396-1, 2014
EGU General Assembly 2014

Study of AKR hollow pattern characteristics at sub-auroral regions

Mohammed Y. Boudjada (1), Sami Sawas (2), Patrick Galopeau (3), Jean-Jacques Berthelier (1), and Konrad Schwingenschuh (1)

(1) Space Research Institute, Austrian Academy of Sciences, Graz, Austria (mohammed.boudjada@oeaw.ac.at, 0043-316-4120-690), (2) Institute of communications and wave propagation, University of Technology, Graz, Austria, (3) Laboratoire Atmosphères, Milieux, Observations Spatiales, CNRS, IPSL, Guyancourt, France

The Earth's auroral kilometric radiation (AKR) is expected to exhibit a hollow pattern similar to that reported for the comparable emissions from Jupiter (e.g. Jovian decametric emissions – DAM). The hollow pattern is a hollow cone beam with apex at the point of AKR emission, axis tangent to the magnetic field direction, and an opening angle of the order of 80°. The properties of the hollow cone can be derived from the so-called dynamic spectrum which displays the radiation versus the observation time and the frequency. We analyze the auroral kilometric radiation recorded by the electric field experiment (ICE) onboard DEMETER micro-satellite. The dynamic spectra lead us to study the occurrence of the AKR recorded in the sub-auroral regions when the micro-satellite was at altitudes of about 700 km. We address in this contribution issues concerning the characteristics (occurrence, latitude and longitude) of the AKR hollow beam and their relations to the seasonal and solar activity variations.