



Terrestrial structured radio emissions occurring close to the equatorial regions

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

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

We study the occurrence of terrestrial radio emissions observed by the electric field experiment (ICE) onboard DEMETER micro-satellite. We principally consider the ICE observations recorded in the HF frequency range between 10 kHz and 3.175 MHz. A dynamic spectrum is recorded each half-orbit with a time and frequency resolutions, respectively, in the order of 3.25 kHz and 2.048 sec. The terrestrial structured radio emission is found to occur when the satellite is approaching the equatorial region of the Earth. It appears as a structured narrow band 'continuum' with a positive or negative low frequency drift rate, less than 1 kHz/s. The bandwidth is, on average, of about 30 kHz. We derive from our investigation the beam and the probable location of the emission source. We discuss the origin of this terrestrial radio emission and its dependence, or not, on the solar and geomagnetic activities.