Geophysical Research Abstracts
Vol. 15, EGU2013-7627, 2013
EGU General Assembly 2013


# Acceleration and loss of oxygen ions in the terrestrial magnetosphere

Elena Kronberg (1), Elena Grigorenko (2), Stein Haaland (1,3), Patrick Daly (1), Lynn Kistler (4), and Iannis Dandouras (5)

(1) Max-Planck Institut für Sonnensystemforschung, Katlenburg-Lindau, Germany (kronberg@mps.mpg.de), (2) Space Research Institute, Russian Academy of Sciences, Moscow, Russia (elenagrigorenko2003@yahoo.com), (3) Department of Physics and Technology, University of Bergen, Norway (stein.haaland@ift.uib.no), (4) University of New Hampshire, Durham, NH, USA (Lynn.Kistler@unh.edu), (5) IRAP, University of Toulouse, UPS-OMP, CNRS, Toulouse, France (Iannis.Dandouras@irap.omp.eu)

We study spatial asymmetries of the oxygen ion intensity distributions in the Earth magnetosphere. The results are based on 7 years of Cluster observations of oxygen intensity measurements from the RAPID and CIS instruments. The energetic ions (>270 keV) seems to be effectively accelerated in the central near-Earth magnetotail, drift around the Earth within about 16 Re and get lost at the noon side. The medium oxygen ions ($\sim$10 keV) show similar trend but without spatial confinement: they are more evenly distributed in the magnetosphere. Our findings constrain models for ion acceleration and loss processes.