

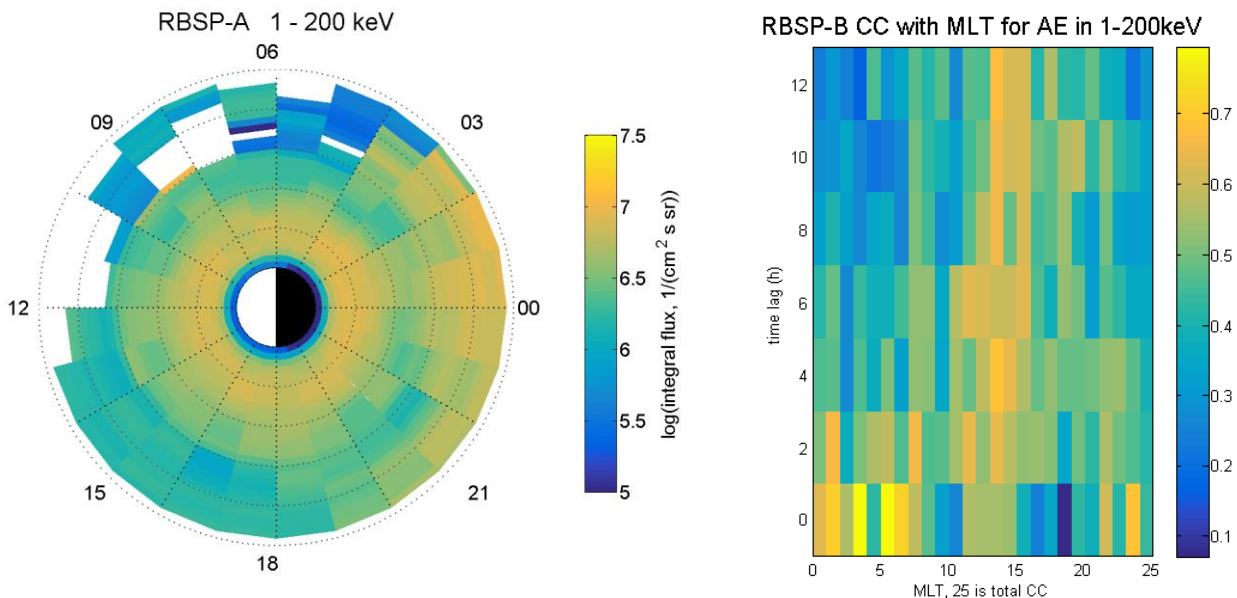
# VAN ALLEN PROBES DATA ANALYSIS ON MAGNETOSPHERIC ELECTRONS

I. Sillanpää, N.Y. Ganushkina, and S. Dubyagin

Finnish Meteorological Institute, Earth Observation, P.O.B. 503, FIN-00101  
HELSINKI, Finland  
email: [ilkka.sillanpaa@fmi.fi](mailto:ilkka.sillanpaa@fmi.fi)

Van Allen Probes (formerly Radiation Belt Storm Probes, RBSP) mission consists of two orbiters on elliptic, slightly inclined orbits (apogees at 5.8  $R_E$  and perigees at the altitude of 600 km). The orbiters (designated as A and B) are kept close to each other and have allowed detailed and multifaceted observations of Earth's inner magnetosphere since their launches in 2012.

Our interest is the magnetospheric electrons with keV or midrange electrons, and we have analyzed full three years of RBSP-A and B data from HOPE and MageIS instruments in the energy range of 1-200 keV. The data sets demonstrate well the dynamics of the plasma in the inner magnetosphere. We have compared and analyzed the RBSP data with solar wind and interplanetary magnetic field as well as geomagnetic parameters and have found interesting connections and possibly drivers of high flux periods. Correlation coefficients between data obtained close to a set MEO orbit and several parameters were studied and optimal time lags for the parameters were identified.



*Figure 1.*

Electron integral fluxes for energy range 1-200 keV from years 2013-2015 presented with magnetospheric local time (MLT) and radial distance from Earth.

*Figure 2.*

Correlation coefficients (CC) between electron integral fluxes for energy range 1-200 keV at MEO orbit at 4.6  $R_E$  and AE index presented with magnetospheric local time (MLT) and time lag for the AE index.