



A study of the dynamics of the ring current during intense and very intense magnetic storm events

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This paper has the objective to study the dynamics of the ring current during different types of magnetic storms. We have taken 6 events where three are very intense magnetic storms ($Dst < -250$ nT) and the others are intense magnetic storms ($-250 < Dst < -100$ nT). The selected intense storms are: 4 May 1998, 10 March 1998, and 12 August 2000. The selected very intense storms are: 15 July 2000, 6 November 2001, and 31 March 2001. The interplanetary data were obtained from ACE spacecraft's page, and the geomagnetic data is from World Data Center for Geomagnetism - Kyoto (WDC-Kyoto), and from Space Physics Interactive Data Resource (SPIDR), on the NOAA's page – Dst and Kp indices were taken from SPIDR with a correction of one hour to the Kyoto time.

Our aim is to analyze their interplanetary characteristics (electric field E_y , B_s interplanetary magnetic field) and their energy coupling function, (ϵ), and the total energy input, (W), to determine the differences between events caused by different interplanetary structures. The geomagnetic data/indices are also employed to study the ring current dynamics and to search the differences in the storm evolution in these events.