

A Global MHD Simulation on the Electrojet Challenge Event

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A 3-dimensional global magnetospheric (MHD) simulation of interaction between the solar wind and the earth's magnetosphere has been executed in order to study the electrojet challenge event for March 19-20, 1999 when solar wind and interplanetary magnetic field (IMF) data with interval of 1 minute by WIND satellite was used as input of simulation. The solar-magnetospheric coordinate system is used in the simulation. The input parameters are the solar wind density, x component of velocity, plasma pressure, y and z components of IMF. In the simulation, almost steady magnetospheric convection generates in the polar region after southward turning of IMF. It comes from balance of reconnection rates in the dayside magnetosphere and the magnetotail.

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