

# **THE EFFECTS OF LARGE Y-COMPONENT INTERPLANETARY MAGNETIC FIELD ON THE TRANSPOLAR POTENTIAL**

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The significance of the southward interplanetary magnetic field (IMF) during geomagnetic storms has been established through rigorous observation and simulation; the significance of the y-component of the IMF has not been so well understood. The effects of the magnitude of the IMF y-component on the transpolar potential as well as on the ring current are two incomplete areas of study in space physics. We have considered both observations from DMSP data during 1995 to 2005 and idealized LFM global MHD simulations to examine the effects of the magnitude of the IMF y-component on the transpolar potential. The asymmetry introduced by the inclusion of the IMF y-component and the resulting affects on the transpolar potential will be discussed along with the effects on the currents traveling between the ionosphere and Magnetosheath regions.

Transpolar Potential, Interplanetary Magnetic Field

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