Abstract Submitted
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Saturation of Transpolar Potential for Large Y-component Interplanetary Magnetic Field[1] ELIZABETH MITCHELL, RAMON LOPEZ, UT Arlington — This study examines the response of the transpolar potential to a large Y-component interplanetary magnetic field (B_y). The transpolar potential responds nonlinearly, saturates, for large IMF in the LFM global MHD simulation. This response occurs for both large B_y and large B_z. DMSP satellites data and AMIE results confirm the saturation of the transpolar potential during large B_y. The magnitude of the IMF at which the transpolar potential becomes nonlinear is the same for the large B_y cases as for the large B_z cases. The magnitude of the transpolar potential at which it becomes nonlinear is significantly smaller for the large B_y cases than the large B_z cases. This indicates transpolar potential saturation does not depend on the strength of the region 1 current. Rather, these results suggest region 1 current may be limited by the transpolar potential.

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