

Abstract Submitted
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Simulation of transpolar potential saturation for northward IMF¹ SHREE BHATTARAI, RAMON LOPEZ, ROBERT BRUNTZ, ELIZABETH MITCHELL, SOPHIA COCKRELL, UT Arlington, JOHN LYON, Dartmouth College, MICHAEL WILTBERGER, NCAR/HAO — When the Interplanetary Magnetic Field (IMF) is strongly southward, the potential across the ionosphere reaches a saturation value and does not increase substantially, even if the IMF becomes much more strongly negative. Recent observations have indicated that the same thing happens for strongly northward IMF. We will present global MHD simulations of this phenomenon using the Lyon-Fedder-Mobarry simulation code and make comparisons to observations from the DMSP spacecraft. We also will show that the behavior of the saturation effect is consistent with a recent explanation for saturation based on the forces on the flow in the magnetosheath.

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Ramon Lopez
UT Arlington

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