

Abstract Submitted
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Behavior of Viscous Potential during Purely Northward Interplanetary Magnetic Field SHREE BHATTARAI, RAMON LOPEZ, Univ. of Texas at Arlington — The solar wind, on passing around the Earth's magnetosphere, drags along with it the plasma inside the magnetosphere due to the formation of Kelvin-Helmholtz waves. This dragging of the magnetospheric plasma close to the magnetopause along the flanks is followed by a return flow inside the magnetosphere, thus creating a circulation pattern. This viscous cycle gets mapped down to the ionosphere, thus imposing an electric field on Earth's ionosphere. The value of the electric potential generated due to the electric field produced by the viscous cycle is called the viscous potential. It was assumed that the viscous potential was independent of IMF orientation but, in this paper, we show that the viscous potential is a function of IMF B_z for northward IMF.

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