

Abstract Submitted  
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**Analysis of the Viscous Potential Determined from MHD Simulations and Comparisons to Observations and a Model<sup>1</sup>** ROBERT BRUNTZ, RAMON LOPEZ, UT Arlington — The viscous potential in Earth's ionosphere is produced by a mechanical interaction between the magnetosphere and the solar wind. It is generally taken to have a value of between 10 and 40 kV and either be constant or depend only on solar wind velocity. Investigations using the Lyon-Fedder-Mobarry global MHD simulation indicate that the viscous potential increases with both increasing solar wind velocity and increasing density, as does a recent model by Newell et al. Empirical data can be inferred from measurements of the transpolar potential by DMSP satellites during intervals when the ionospheric potential due to merging with the solar wind should be extremely small, assuming that the potential is driven primarily by the viscous interaction. This study will compare the LFM results to the Newell et al. model and to the DMSP observations.

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