

Abstract Submitted
for the TSS08 Meeting of
The American Physical Society

Is All $\mathbf{v} \times \mathbf{B}_z$ Equal?¹ FELIPE MULFORD, JORGE LANDIVAR, ELIZABETH MITCHELL, RAMON LOPEZ, UT Arlington — Solar wind electric field, $\mathbf{v} \times \mathbf{B}_z$, is generally viewed to be the major driver of magnetospheric activity. A major diagnostic of magnetospheric activity is the potential imposed on the ionosphere. In this study we examine if, in fact, the ionospheric potential is the same for similar values of $\mathbf{v} \times \mathbf{B}_z$ or whether the average potential depends on how big the \mathbf{v} and \mathbf{B}_z are relative to each other. We use data from DMSP spacecraft collected during periods when $\mathbf{v} \times \mathbf{B}_z$ is less than 3 mV/m, in order to avoid the effect of polar cap potential saturation. Global MHD models suggest that there should be a difference in the magnetospheric response. We will present our findings from the data.

¹This material is based upon work supported by CISM, which is funded by the STC Program of the National Science Foundation under Agreement Number ATM-0120950, and by NSF grant GEO-0607195.

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Date submitted: 01 Feb 2008

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