

Abstract Submitted
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Determining geoeffective length from LFM simulation ELIJAH MURPHY, SHREE BHATTARAI, RAMON LOPEZ, UT Arlington — The orientation of Interplanetary Magnetic Field (IMF) plays an important role in Space weather prediction. The process in which Earth's magnetic field interacts with IMF is called magnetic reconnection. The amount of reconnection determines the amount of energy transfer from the solar wind to Earth. For a given orientation of the IMF there exist effective length out in the solar wind, perpendicular to both the IMF and the Sun-Earth line, over which the solar wind flow is able to reach the reconnection region. This controls the rate at which the magnetic flux is merged and therefore the voltage imposed on the magnetosphere-ionosphere system. This length is called the geoeffective length. We present a method for determining geoeffective length from simulations of the solar wind magnetosphere interaction obtained from the Lyon-Fedder-Mobarry (LFM) code.

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