

RESPONSE OF THE MARTIAN ENVIRONMENT TO A ROTATION OF THE IMF

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Simulation studies of the Martian environment are usually restricted to stationary situations under various conditions of the solar wind and solar radiation. We make use for the first time of the three dimensional multispecies hybrid simulation model that we have developed to investigate the response of the Martian plasma environment to a sudden rotation of the IMF. The simulation model couples charged and neutral species via three ionisation mechanisms: the absorption of solar extreme ultraviolet radiation, the impacts of solar wind electrons, and the charge exchanges between ions and neutral atoms or molecules. Films showing modifications of the induced magnetosphere during this simulated event will be presented. Timescales necessary to recover a stationary state can be estimated from such simulations, and possible implications for space observations will be discussed.

Mars, Solar Wind, simulation

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