TWO-DIMENSIONAL HYDRODYNAMIC MODELING of the SOLAR WIND TERMINATION SHOCK AND THE GLOBAL HELIOSPHERE

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A two-dimensional time-dependent hydrodynamic model has been used to model the solar wind termination shock and the global heliosphere. The region of interaction between the solar wind and the interstellar medium is of increasing interest as the Pioneer and Voyager spacecraft approach this region. We will present results of a study the motion of the termination shock in response to variations in the solar wind. A study of the response of the shock to 11 year solar cycle variations in the solar wind showed that the shock moves considerable slower and not as far as one would predict from simpler one-dimensional models, due the the influence of the VLISM (*Karmesin et al., GRL 22, 1153 1995*. In this talk, we will compare and discuss results of both one- and two-dimensional models of the motion of the shock in response to solar wind variations. We will also present results from simulations of a hydrodynamic instability of the heliopause caused by the drag between interstellar neutrals and the plasma ions.

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2. Collisionless Shocks and Plasma Waves in the Heliopshere
   (Invited Talk)

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4. 1 may want to show a regular VHS video using the demo facilities

5. oral

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