

Hybrid modelling the Pioneer Venus Orbiter magnetotail data

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This is our first report from a modelling effort to compare the Pioneer Venus Orbiter magnetotail data and recently developed global hybrid plasma simulation tool for Venus-solar wind interaction. High resolution data from the spacecraft's magnetometer provides a possibility to verify the reliability of the model and to study the global Venusian plasma environment. Hourly merged deep space plasma and magnetic field data from the spacecraft is used to retrieve the solar wind upstream conditions. In the numerical simulation model, particles consist of kinetic H⁺ and O⁺ ions and a quasineutralizing massless electron fluid. In addition, the ions are self-consistently coupled to the nonradiative electromagnetic field. Comparison results suggest a compatibility between the model and the data.