

## **Global Modeling of Mercury's Magnetosphere**

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Mercury's weak magnetic field, tenuous exosphere and position in the inner solar system have made it an attractive target for numerical simulations, ground based observations and spacecraft measurements. The new MESSENGER and BepiColombo missions are providing striking new data. We focus specifically on observations and discoveries made by the MESSENGER spacecraft's first three flybys.

Recent global MHD, multi-fluid and hybrid models have been applied to the Hermean system. These models offer a global picture that builds on one dimensional spacecraft flybys, and become valuable tools for interpreting MESSENGER magnetic field and plasma data. Models can make quantitative predictions which can be tested against MESSENGER and BepiColombo data, so that local features observed by these spacecraft can be understood and extrapolated into a global understanding of Mercury's conditions in the solar wind. Here we give an overview of the global models being used to study the Hermean magnetosphere and their results.