



Characterization of Mercury's Space Environment

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Data from the Helios spacecraft have been revised to identify different solar wind conditions (interplanetary magnetic field intensity, solar wind density, velocity and temperature) at Mercury's location, as they induce critical changes in the Hermean environment. In particular, the weak magnetic field of the planet and the increasing weight of the interplanetary magnetic field (IMF) BX component at Mercury's orbit, introduce critical differences in the Mercury magnetosphere, such as a strong north–south asymmetry. Different geometries of the Mercury's magnetosphere are also calculated as response to the different solar wind conditions through a Toffoletto-Hill modified model (Massetti et al., 2007). Results allow to compute the cutoff rigidities, in order to estimate the energetic charged particle transmission through the Hermean magnetosphere to the specific location of the BepiColombo spacecraft

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