



## **Plasma circulation at Mercury and Neutral Particle Emission**

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In this study we discuss the plasma circulation and the neutral atom emission at Mercury. The plasma and neutral distribution in space and energy has been simulated by means of a single-particle Monte-Carlo model. The peculiar configuration of the Hermean magnetosphere, as it is expected after the Mariner-10 observation of a weak magnetic field, allows a significant part of the incoming solar wind to enter Mercury's environment. Intense ion fluxes are expected in the cusp regions, which are extremely large when compared to the Earth's ones. A previously released model of proton circulation at Mercury is completed, in this study, by adding different ionized component of the solar wind, as well as by considering all the release processes that could occur at the planetary surface. Simulated neutral atom images are investigated in the frame of the Neutral Particle Analyser - Ion Spectrometer (SERENA NPA-IS) experiment, proposed to fly on board the ESA mission BepiColombo/MPO.