



## **Cassini observations and MHD Model study of the Enceladus-magnetospheric plasma interaction**

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Since 2005, Cassini has made fourteen close flybys to Enceladus, the second Icy moon of Saturn. These flybys form a good coverage of space around Enceladus and its plume. The magnetometer on board Cassini has recorded field perturbations around the closest approach. These data indicate an interaction region around Enceladus, between Saturn's magnetospheric plasma and Enceladus' neutral plume. Our MHD model simulates the local ionization and pickup processes that cause momentum exchange between magnetospheric plasma and plume neutrals. Such momentum exchange self-consistently creates field draping around the center of the obstacle to the corotating magnetospheric plasma. We train our model with observations along all these fourteen Cassini paths, and then determine the size and location of the Enceladus plume.