



Callisto plasma interaction

Jesper Lindkvist, Mats Holmström, Shahab Fatemi, and Stas Barabash

Swedish Institute of Space Physics, Solar System Physics and Space Technology, Sweden (jesper@irf.se)

Modeling the interaction between Callisto and Jupiter's magnetosphere is important to understand the origin of the magnetic field perturbations observed by Galileo, potentially related to subsurface oceans. By using a hybrid plasma solver (ions as particles and electrons as a fluid), we have varied the internal conductivity of Callisto, and compared with magnetometer data from a flyby (C9) by the Galileo spacecraft. We focus solely on the case when Callisto has been observed to have no ionosphere. In Callisto's orbit around Jupiter, the plasma environment will vary, and a comparative study has been conducted for the different regions it encounters. Understanding the plasma environment at Callisto is also important in view of the future JUICE mission.