



The spatial variations in the surface properties due to the interaction with the planet's magnetosphere: Dione and Rhea

K. Stephan (1), R. Jaumann (1), C. Hibbitts (2), C. Paranicas (2), R.N. Clark (3), D.P. Cruikshank (4), R.H. Brown (5), G. Filacchione (6), and Cassini VIMS team ()

(1) DLR, Institute of Planetary Research, Berlin, Germany (Katrín.Stephan@dlr.de), (2) JHU-APL, Laurel, USA, (3) U.S. Geological Survey, Denver, USA, (4) Ames Research Center, Moffett Field, USA, (5) Lunar and Planetary Lab., University of Arizona, Tucson, AZ 85721, USA, (6) INAF-IASF, Roma, Italy

Mapping of the variations of the physical and chemical surface properties on icy satellites (Stephan et al., 2009a,b,c; Jaumann et al., 2008) has shown that the knowledge of the spatial variations in the surface properties are essential to resolve the origin of the specific surface compounds or explain the spatial variations in their physical characteristics. The interaction between the satellite surfaces and their planetary environment is different for each satellite depending on its location within the planetary system (Paranicas et al., 1990). In order to understand the association of specific surface compounds of the Jovian and the Saturnian satellites to the interaction with the planet's magnetosphere a detailed mapping of the location and spatial extension of their spectral properties with respect to the satellites specific location within the planet's magnetosphere was started. Results will be presented for the Saturnian satellites Dione in comparison to its outer neighbour Rhea.

Jaumann, R. et al. (2008), Icarus, 193 (2), 407 – 419; Paranicas, C. et al. (1990), J. Geophys. Res., 95, 20,833-20,838; Stephan, K. et al. (2009a), LPSC, Abstract #1377; Stephan, K. (2009b), EPSC, Abstract #EPSC2009-633; Stephan, K., et al. (2009), Icarus, in press.