



Dusty plasma investigations as a tool for diagnostic Space Weather conditions for a future planetary missions

Barbara Atamaniuk (1), Hanna Rothkaehl (1), Roman Schreiber (1), and Jan-Erik Wahlund (2)

(1) Space Research Center, Polish Academy of Sciences, Warsaw, Poland (batama@cbk.waw.pl, +48 22 840-31-31), (2) Swedish Institute of Space Physics Box 537, SE-751 21 Uppsala, Sweden

I shortly present the overview of our knowledge about the dust and dusty plasma in the Jovian system and the main concept of JUICE (JUperiter ICy moon Explorer) mission.

Then I concentrate on the Radio & Plasma Waves Investigation (RPWI) selected for implementation on the JUICE mission.

RPWI consists of a highly integrated instrument package that provides a whole set of plasma and fields measurements.

The RPWI instrument has outstanding new capabilities not previously available to outer planet missions, and that would address many fundamental planetary science objectives. Specifically, RPWI would be able to study dusty plasma processes in the Jovian magnetosphere and the exospheres of Ganymede, Europa and Callisto.

Moreover, RPWI will search for exhaust plumes from cracks on the icy moons, as well as μm -sized dust and related dust-plasma surface interaction processes occurring near the icy moons of Jupiter.

This research is partly supported by grant O N517 418440