



## **Modeling the satellite particles in planetary exospheres : application to Titan**

Philippe Garnier (1,2), Dominique Toublanc (1,2), Romain Rousseau (1,2), Iannis Dandouras (1,2), Anna Kotova (1,2), Pontus Brandt (3), Kostas Dialynas (4,5), Stamatios Krimigis (3,4)

(1) Université de Toulouse; UPS-OMP; IRAP; Toulouse, France, (2) CNRS; IRAP; 9 Av. colonel Roche, BP 44346, F-31028 Toulouse cedex 4, France, (3) Applied Physics Laboratory, Johns Hopkins University, Laurel, MD, USA, (4) Office for Space Research and Applications, Academy of Athens, Athens, Greece, (5) Department of Astrophysics, Astronomy and Mechanics, Faculty of Physics, National Kapodistrian University of Athens, Athens, Greece

The planetary coronae (or exospheres) are poorly known in their outer parts, since neutral densities are low compared with the instruments detection capabilities. Exospheric models are thus often the main source of information at such high altitudes. We calculate here the importance of a specific exospheric population, i.e. satellite particles, which is usually neglected in the models. These particles are indeed produced through rare collisions in the exospheres, and may either be negligible or dominate the exospheres of all planets with dense atmospheres in our solar system, depending on the balance between their sources and losses. We present here the first results of such calculations in the Titan environment, and compare with results recently obtained by remote sensing with the energetic neutral atom imager INCA onboard the Cassini MIMI experiment.