



## **Simulations of interstellar dust particle trajectories in our Solar System**

Veerle Sterken (1,2), Sascha Kempf (1,2), Nicolas Altobelli (3), Eberhard Grün (1,4), Ralf Srama (1,5), and Gerhard Schwehm (3)

(1) MPIK, Heidelberg, Germany (veerle.sterken@mpi-hd.mpg.de, +49 6221 516563), (2) IGEP, TU Braunschweig, Germany, (3) ESAC, Madrid, Spain, (4) University of Colorado, Boulder, US, (5) IRS, Universität Stuttgart, Germany

Trajectory and density simulations of interstellar dust particles (ISD) in the Heliosphere are presented. Relative ISD fluxes are derived at various locations in the Solar System. Special emphasis is put on the prediction of densities and fluxes at Cassini orbit. The simulation results show a fluctuation of the particle density with the Solar Cycle. The strength and shape of this fluctuation depends on particle surface optical properties and on the particle charging. Preliminary results predict the density fluctuations at Saturn orbit to stay in a range between 0 to 5 times the ISD-density at infinity. The strongest increase of ISD flux and density is expected at Saturn between 2005 and 2012, where the peak of the increment differs in time, for different particle sizes. The simulations can help predicting and reducing the data for various other interplanetary missions.