# Dust near the Sun: interaction with the solar wind.

**I. Mann** (1) and A. Czechowski (2)

(1) Institut fuer Planetologie, Westfaelische Wilhelms-Universitaet, Wilhelm-Klemm-Strasse 10, 48149 Muenster, Germany (imann@uni-muenster.de/(49)251 83 36301, (2) Space Research Center, Polish Academy of Sciences, Bartycka 18A, PL 00 716 Warsaw, Poland (ace@cbk.waw.pl/(48) 22 8403131)

The structure of the circumsolar dust cloud in the vicinity of the Sun is still not well known. In this contribution, we concentrate on two topics: the role of the dust as the "inner source" of the pick-up ions discovered by SWICS/Ulysses, and the dynamics of very small (few 0.001 micron) dust grains, the motion of which is strongly affected by electromagnetic forces. We have recently shown that mutual collisions of dust vaporize parts of the dust material. The dust material contributes to the inner source pick-up ion population in the solar wind that was discovered during the Ulysses space mission. Measurements of cometary dust composition show enhanced abundances of light elements, C,H,O,N, compared to typical meteoritical material generated from asteroids. This points to the existence of organic compounds in cometary dust. If our model for the generation of pick-up ions is correct, then the measurements imply that cometary dust contains organic refractory compounds that can survive high temperatures in the vicinity of the Sun. Aside from gravity, the small particles in the solar corona are influenced by radiation pressure and Lorentz force. We study the motion of particles and show that sub-micrometer particles that are predominantly influenced by Lorentz force attain significantly higher velocities than particles that are influenced by gravity and radiation pressure.