Geophysical Research Abstracts,
Vol. 10, EGU2008-A-09371, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-09371
EGU General Assembly 2008

Hyperbolic dust particle populations in the Mars Dust Counter data: A closer look

R. Senger, E. Igenbergs

Lehrstuhl für Raumfahrttechnik, Technische Universität München, Garching, Germany, (r.senger@lrt.mw.tum.de / Fax: +49 89 289 16004)

During five years of operation between the orbits of Earth and Mars, the Mars Dust Counter instrument on the Japanese mission NOZOMI detected altogether 98 particles of size between 10^{-9} to 10^{-17} g. For 80 of these particles, particle mass and orbital elements were determined from the impact data. In a first analysis, distinct particle populations were identified among these 80 particles. In the elliptic domain, populations of apex particles were found that show similarities to particle populations identified earlier from dust data of various sources. In the hyperbolic domain, the two larger particle populations consisting of 7 and 5 particles, respectively, show characteristics that suggest that the particles in these populations are likely to be beta-meteoroids and interstellar matter, respectively. However, a closer look on the particles' trajectories and the possible flight paths of beta-meteoroids and interstellar matter is required to get more security in these assumptions. These considerations are discussed here.