Geophysical Research Abstracts,
Vol. 10, EGU2008-A-11857, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-11857
EGU General Assembly 2008

Wind Driven Grain Transport on Earth and Mars.

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The wind driven transport of material at the surface of Mars is being actively researched both in laboratory simulators and through surface and orbital probes. Convergence is first now being reached between observation, simulation and theory. Specifically processes are being quantified whereby dust particulates aggregate and become dispersed allowing abundant dust transport at the wind speeds (wind induced surface shear stress) observed, close to the threshold at which solid sand grains become mobilized (1,2,3). Granular electrification is being studied in detail both under terrestrial and Martian conditions and is still far from being well understood.

Dust and wind flow sensing instrumentation will be presented for the forthcoming ESA ExoMars mission and recent results of laboratory simulations will be discussed.

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