



A forthcoming European Mars Simulation Wind Tunnel Facility.

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Performing laboratory simulation of the Martian atmosphere/surface interface requires reproduction of the atmospheric properties (pressure, temperature, composition, etc.), the boundary layer (near surface wind flow) and the Martian surface material (regolith). Essentially this implies a Mars environmental wind tunnel. Such a simulator has operated at the Mars Simulation Laboratory, Aarhus University since 2000 (1). Applications of this facility have been varied, ranging from Mars lander instrument development and testing to laboratory research of Aeolian processes, granular transport and physical properties of the surface materials e.g. grain electrification, magnetism aggregation (2,3).

With a view to instrument (and solar cell) development and testing as well as future simulation research a new (ESA supported) wind tunnel facility is being constructed at the Mars Simulation Laboratory, Aarhus University. It will both be larger and functionally improved compared to the existing facilities. The scope of the experimental facility will be presented and user facilitation discussed.

References: (1) J.P. Merrison, et al., "Simulation of the Martian Dust Aerosol at Low Wind Speeds", *J. Geophys. Res.*, 107, 5133, 2002 (2) J.P. Merrison, et al., "An Environmental Simulation Wind Tunnel for Studying Aeolian Transport on Mars", *Planetary and Space Science*, in press, 2008 (3) J.P. Merrison, et al., "Determination of the Wind Induced Detachment Threshold for Granular Material on Mars using Wind Tunnel Simulations.", *Icarus*, 191, 568, 2007