

Wednesday, November 12, 2008
WATER, CLOUDS, AND DUST: UNDERSTANDING THE DUST CYCLE
9:00 – 10:30 a.m.

Chair: M. Kahre

Wilson R. J. * Haberle R. M. Noble J. Bridger A. F. C. Schaeffer J. Barnes J. R.

Cantor B. A. **(Invited, 20 minutes)**

[*Simulation of the 2001 Planet-encircling Dust Storm with the NASA/NOAA Mars General Circulation Model*](#) [#9023]

This paper describes a synthesis of MOC imagery and TES opacity and temperature retrievals and the use of a Mars general circulation model to investigate aspects of the initiation and evolution of the 2001 planet encircling dust storm.

Montabone L. * Martinez-Alvarado O. Lewis S. R. Read P. L. Wilson R. J.

[*Teleconnection in the Martian Atmosphere During the 2001 Planet-encircling Dust Storm*](#) [#9077]

In this paper we report on the dynamical events that connected distant favourable dust lifting regions and activated secondary lifting centers thousands of kilometers apart during the 2001 planet-encircling dust storm.

Walter C. Austin G. L. *

[*Dust Storm Prediction with the Auckland Mars Mesoscale Model GM4*](#) [#9001]

The University of Auckland Global Mars Mesoscale Meteorological Model (GM4) has been used to study the annual variation of the weather in two study sites in order to find a correlation between local atmospheric conditions and the occurrence of local dust storms.

Rafkin S. C. R. *

[*Tropical Dust Cyclones on Mars*](#) [#9034]

A positive feedback process between local dynamics and radiative forcing of dust is explained by geostrophic adjustment theory and a mechanism related to the wind-induced sensible heat exchange hypothesis for tropical cyclones.

Richardson M. I. * Vasavada A. R.

[*The Dust Cycle and the Surface: Insight from TES Albedo Measurements*](#) [#9119]

We review MGS TES observations of the changes in surface albedo. These are mostly due to dust cover. The global storm of 2001 dominated changes in albedo. No significant brightness differences between MGS and Viking.

Hébrard E. * Coll P. Marticorena B. Bergametti G. Montmessin F. Forget F.

[*An Aerodynamic Roughness Map Derived from Martian Rock Abundance Data and its Effects on Aeolian Erosion Thresholds in a MGCM*](#) [#9057]

We have applied to Mars a recent physical model designed to account for the influence of the surface characteristics on the spatio-temporal variability of dust emission in arid terrestrial environments.

10:30 – 11:00 a.m.

BREAK