Tuesday, November 11, 2008
MESOSCALE AND MICROSCALE: NEWS FROM PHOENIX, MER, AND MODELING
9:00 – 11:40 a.m.

Chairs: M. Richardson
N. Renno

Taylor P. A. * Gunnlaugsson H. P. Holstein-Rathlou C. Lange C. F. Moores J. Cook C. Dickinson C. Popovici V. Seabrook J. Whiteway J. **(Invited, 20 minutes)**
Phoenix: Summer Weather in Green Valley (126W, 68N on Mars) **[#9024]**
Near continuous measurements of temperatures and pressure [1] on the Phoenix Lander and winds from the Telltale [2] are used to indicate the typical daily cycles of temperature, pressure and winds at the Phoenix site (126W, 68N) during mid summer on Mars.

Davy R. * Taylor P. A. Gunnlaugson H. P. Davis J. A. Lange C. F. Weng W.
Temperature and Wind Data from the Phoenix MET Station and Their use in Estimating Turbulent Heat Fluxes **[#9079]**
Spectral analysis of stable and unstable temperature data. Estimating turbulent parameters and surface heat flux. Lander influences and possible corrections.

Ellehøj M. D. Taylor P. A. * Gunnlaugsson H. P. Gheynani B. T. Holstein-Rathlou C. Drube L. Whiteway J.
Phoenix: Dustless Devils at the Lander Site **[#9026]**
Masurements of pressure are used to identify the passage of vortex structures at the Phoenix site on Mars. LES modelling of highly convective boundary layers shows that vertically oriented vortices with low pressure, warm cores, can develop on internal boundaries.

Michaels T. I. Rafkin S. C. R. *
MRAMS Today — One Example of Current Mars Mesoscale Modeling Capabilities **[#9116]**
A summary of notable changes and additions to the nonhydrostatic Mars Regional Atmospheric Modeling System (MRAMS) since its introduction in 2001. Intended to exemplify the impressive capabilities that current and future mesoscale models may possess.

Barnes J. R. * Tyler D. **(Invited, 20 minutes)**
The OSU Mars Mesoscale and LES Models: A Status Report **[#9097]**
The current status of developments and studies involving the OSU Mars Mesoscale Model and the OSU Mars LES Model will be discussed.

Martínez G. M. Valero F. Vázquez L. **(1-minute poster summary)**
Martian Planetary Boundary Layer Characterization Under Convective Conditions **[#9002]**
An extensive study of the magnitudes characterizing the convective Martian Planetary Boundary Layer (MPBL) at the Viking Lander 1, Viking Lander 2, and Pathfinder sites has been carried out.

Petrosyan A. Galperin B. Gundersson K. Larsen S. Lewis S. Read P. Renno N. Richardson M. Rogberg P. Savijarvi H. Seiferlin K. Siili T. Thomas N. Toigo A. **(1-minute poster summary)**
The ISSI International Study Team on the Martian PBL — Status Report and Plan **[#9100]**
An ISSI Mars PBL study team including theorists, modelers, and those with experience in the analysis of martian and terrestrial boundary layer data has been assembled and started its work in 2008. Team's work plan and status report are presented.

Odaka M. Yamashita T. Sugiyama K. Nakajima K. Ishiwatari M. Hayashi Y.-Y. **(1-minute poster summary)**
Development of a Three Dimensional Non-Hydrostatic Model for MartianAtmosphere and a Numerical Simulation of Thermal Convection **[#9105]**
We develop a three dimensional non-hydrostatic model and perform a numerical simulation of thermal convection in the martian atmosphere without background wind and dust radiative heating.

Barnes J. R. Tyler D. Hinson D. P. **(1-minute poster summary)**
The Depth of the Daytime Convective Boundary Layer on Mars: A Case of Extremes **[#9076]**
The spatial distribution and seasonal variation in the depth of the convective boundary layer on Mars is examined using mesoscale and LES modeling, along with observational data.

Sun X. Taylor P. A. **(1-minute poster summary)**
Slope Winds on Mars in Relation to the Phoenix Lander Mission **[#9053]**
Measurements reported from the Phoenix mission by Taylor et al. (also submitted) suggest that slope winds may explain some of the observed features. A simple 1-D model of slope winds on Earth has been adapted to Mars conditions to investigate this possibility.

10:30 – 11:00 a.m. BREAK

Spiga A. * Forget F. Montabone L.
Study of the Martian Boundary Layer, Mountain Meteorology and 2001 Dust Storm with the LMD Mesoscale Model **[#9028]**
Insights on the martian boundary layer, mountain meteorology and 2001 dust storm are presented from simulations by the new LMD mesoscale model.

Toigo A. Siili T. * Richardson M.
Equatorial Near-Surface Atmospheric Temperature Profiles: Opportunity Mini-TES Observations and High-Resolution MarsWRF Simulations **[#9118]**
Simulations of the PBL at the Opportunity MER landing site were made with the planetWRF atmospheric model in LES mode. Comparison to Mini-TES temperature data and focus on the structure of convection and length scales of transport will be presented.

Wolkenberg P. M. * Formisano V. Rinaldi G. D'Amore D. Geminale A. Montabone L.
Spiga A. Michaels T. I.
An Atmospheric Hot Ring Around Olympus Mons — Comparison with Mesoscale Models (LMD and MRAMS) **[#9126]**
We report about a recent discovery made with PFS-MEX data on Olympus Mons. In certain seasons and local times, we observe two temperature increases, one located to the north of the volcano and one located to the south, from the surface up to 15 km.

Spiga A. Forget F. **(1-minute poster summary)**
A New Method to Estimate the Solar Irradiance on Martian Slopes **[#9015]**
We propose an accurate and computationally efficient method to calculate, in a Mars-like dusty atmosphere, the solar irradiance reaching an inclined surface assuming the value in the horizontal case is known.