

MATERHORN Investigator Meeting – IV
University of Utah
October 9/10, 2014

Program

Day 1 - October 9 - University Guest House, City Creek Room

7:30-8:00: Coffee/Refreshments

Session 1: Chair – Dave Whiteman

- 8:00-8:20 H.J.S Fernando - Program update
8:20-8:40 E.R. Pardyjak - MATERHORN FogX Plan
8:40-9:00 T.K. Chow - Development of WRF-IBM for complex terrain: Part I
9:00-9:15 J. Bao - Development of WRF-IBM for complex terrain: Part II
9:15-9:30 Z. Silver, R. Dimitrova and T. Zsedrovits - High Resolution Modeling for
MATERHORN Field Campaigns
9:30-9:45 J. Massey – MATERHORN WRF Modeling

9:45-10:15 Break

Session 2: Chair – Joe Fernando

- 10:15-10:30 S. De Wekker - Observations and modeling of the daytime boundary layer around
an isolated Mountain
10:30-10:45 M. Sghiatti - Spatial variability of turbulent kinetic energy and the turbulent fluxes
in a daytime boundary layer around an isolated mountain
10:45-11:00 S. Pal - Spatial Variability of the Atmospheric Boundary Layer Height around an
isolated Mountain
11:00-11:45 D. Jensen - MOST breakdown during MATHERHORN
11:45-12:00 M. Lehner - A case study of the nocturnal boundary layer on a slope at the foot of a
desert mountain
12:00-12:15 Laura Leo – Waves and turbulence in katabatic flows

Lunch

12:15-1:30: The Point Restaurant (short walk from the U Guest House)

Session 3: Chair - Tina Chow

- 1:30-1:45 S. Hoch - Energy Balance and Subsurface Properties
1:45-2:00 C. Huang - Soil moisture observations and evaporative transport
2:00-2:15 T. Pratt - Towards a PMD--Based Soil Moisture Sensor
2:15-2:30 Triple Doppler Wind Lidar Observations of Turbulent Winds over Mountainous
Terrain

Session 4: Group Discussions

Group Discussion Session Topics:

1. MATERHORN-X 2:30-3:15 - Session Chair – E. Pardyjak
 - a. Updating the scientific issues – (e.g. Diurnal slope flow, similarity theory, stratified turbulence on slopes)
 - b. Evaluation of the experiments – what could we have done better?
 - c. Granite Mountain test bed – Future opportunities
 - d. Challenges with MATERHORN-X data and analysis – unified dataset for modelers (Completing the list of QC's datasets and requirements needed for data assimilation efforts – this topic will extend into the M session)

3:15-3:30 Break

2. MATERHORN-M 3:30-4:15pm – Session Chair – J. Hacker
 - a. Cross fertilization efforts between modelers and experimentalists – what have been accomplished so far? What has been done (e.g. Steenburgh-Massey-Hoch)? What could be done?
 - b. Identification of a small number of IOPs with appropriate weather and good data coverage for the purposes of both LES modeling and data assimilation development.

6:00pm Dinner at John and Sarah Pace's house! 2180 East 900 South, Salt Lake City UT 84108, 801-583-0298

Day 2 - Friday October 10, 2014 - Officer's Club, North Room

8:00-8:30 Coffee/Refreshments

3. MATERHORN-P-8:30-9:15am - Session Chair – H.J.S. Fernando
 - a. Progress update
 - b. Massey/Pardyjak started looking at Stability formulations
 - c. Jensen – countergradient flux parameterizations during transition
 - d. Dimitrova – implementing new parameterizations
 - e. Lab experiments and high resolution simulations? – where are we now? have they helped?
4. MATERHORN-T - 9:15-9:45am – Session Chair – T. Pratt
 - a. Challenges for technology developments (e.g., FAA has restricted drone flights in national airspace pending a review; microwave sensing of moisture etc..)
5. MATERHORN-Fog planning & discussion – 9:45-11:00am - Session Chair – Z. Pu
 - a. Climatological study and WRF high-resolution real-time forecasts to support MATHERHORN fog experiment
 - b. Objectives
 - c. Science Plan
 - d. New partners

Friday Afternoon – Visit Heber Valley Fog experiment site