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MATERHORN Field Campaigns: An Overview[1] HARINDRA FERNANDO, University of Notre Dame, ERIC PARDYJAK, University of Utah, MATERHORN TEAM[2] — Emerging important applications have resuscitated scientific and societal interests in mountain terrain flows. Funded by a MURI grant from the Office of Naval Research in 2011, the Mountain Terrain Atmospheric Modeling and Observations (MATERHORN) Program has achieved several important scientific milestones, which will be outlined in this presentation. MATERHORN has four principal thrusts - Modeling, Experimental, Technology and Parameterizations - that are symbiotically directed toward identifying model deficiencies and knowledge gaps, conducting process studies, and developing knowledge and tools for model improvements. Two comprehensive field studies were conducted during September 25 to October 31, 2012 (focusing on quiescent fair weather; wind speeds < 4 m/s) and May 1 to May 30, 2013 dealing with synoptic influence, moister surface conditions, and moderate (5 to 10 m/s) and strong (> 10m/s) wind periods. An unprecedented suite of high-end instrumentation was used, allowing investigations from tens of km to millimeters and hours to second scales. A host of phenomena that signifies flow interactions across a range of scales were identified, and the dynamics of a selected few will be discussed.

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[2]www.nd.edu/ dynamics/materhorn

Harindra Fernando
University of Notre Dame

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