

MATERHORN-X Project Purpose

MATERHORN-X will conduct measurements with unprecedented spatio-temporal detail to support modeling efforts and process studies. Data from remote sensors, an instrumented UAV and a dense sensor network will be used for model evaluation over many grids and over tens of km. Primarily, the Granite Mountain Atmospheric Science Testbed (GMAST) at the US Army Dugway Proving Grounds (DPG) will be employed, which is the most sophisticated complex terrain test bed in existence. These will follow experiments in the Salt Lake basin to investigate fog-laden complex terrain flows. Archived data from T-REX (Grubišić, et al. 2008), VTMX (Doran et al. 2002) and other field experiments (e.g. MeteoDiffusion in Italy; Fernando et al. 2011) will also be used.

Doran, J.C., J.D. Fast, and J. Horel, 2002: The VTMX 2000 campaign. *Bull. Amer. Meteor. Soc.*, 83, 537-551.

Fernando, H.J.S., S.L. Leo, S. DiSabatino, and A. Dallman, 2011: Evening transition in inland and coastal mountainous terrain, AMS 91st Annual Meeting, 23-27 January, Seattle, WA, paper 4.5.

Grubišić, V., J.D. Doyle, J. Kuettner, S. Mobbs, R.B. Smith, C.D. Whiteman, R. Dirks, S. Czyzyk, S.A. Cohn, S. Vosper, M. Weissman, S. Haimov, S. De Wekker, L. Pan, F.K. Chow, 2008: The terrain-induced rotor experiment: an overview of the field campaign and some highlights of special observations. *Bull. Amer. Met. Soc.*, 89, 1513-1533.