Validation of surface temperature and soil moisture
MM5-NOAH simulations within the framework of
CEOP (coordinated enhanced observing period)
Asia-Australia monsoon project (CAMP) on the
Tibetan Plateau

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The energy and water balance cycle over the Tibetan Plateau plays an important role
within global and continent scale climate systems. In order to understand the seasonal
hydro-meteorological cycle on the Tibetan Plateau, intensive and long-term observa-
tions have been collected within the framework of the Global Energy and Water
Cycle Experiment (GEWEX) Coordinated Enhanced Observing Period (CEOP). In
this investigation, the Pennsylvania State University/National Center for Atmospheric
Research (PSU/NCAR) Meso-scale Model version 5 (MM5) has been used in combina-
tion with the NOAH\textsuperscript{1} Land Surface Modeling (LSM) approach to simulate the
meso-scale atmospheric circulation on the Tibetan Plateau in 2005. Concurrent to the
simulation period an extensive set of satellite observations has been collected over
this region by the Advanced Synthetic Aperture Radar (ASAR) and Advanced Along
Track Scanning Radiometer (AATSR) onboard the European Environmental Satel-
lite (EnviSat). The satellite observations are used, here, to validate the MM5-NOAH
modeled land surface states: soil moisture and surface temperature. The C-band (5.3
GHz) ASAR backscatter observations are compared to the surface soil moisture. The
thermal observations (10.8 and 12.0 $\mu$m) acquired by AATSR are compared to the
simulated surface temperatures.

\textsuperscript{1}National Centers for Environmental Prediction (NCEP), Oregon State University
(Dept of Atmospheric Sciences), Air Force (both AFWA and AFRL - formerly AFGL,
PL), Hydrologic Research Lab - NWS (now Office of Hydrologic Dev – OHD)