

NCAR/CU Surface, Soil, and Vegetation Observations during the International H₂O Project 2002 Field Campaign

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Measurements of heat and moisture flux from 10 surface flux stations and an aircraft illustrate how vegetation and soil moisture influence the transport of heat and moisture from the surface to the atmosphere.

The International H₂O Project (IHOP_2002; Weckwerth et al. 2004) field campaign was conducted over the Southern Great Plains (Oklahoma, north Texas, Kansas) from 13 May to 25 June 2002. The objective of IHOP_2002 is to improve warm-season quantitative precipitation forecasts (QPFs) in numerical weather prediction models. One of the key factors in improving such forecasts is the accurate representation of land surface processes (Chen et al. 1997, 2001; Ek et al. 2003; Trier et al. 2004; Holt et al. 2006). Concerns about the effects of land surface processes on climate led to several earlier field campaigns to collect land surface data [e.g., First International Satellite Land Surface Climatol-

ogy Project (ISLSCP) Field Experiment (FIFE; Sellers et al. 1992), Boreal Ecosystem-Atmosphere Study (BOREAS; Sellers et al. 1995, 1997), and Hydrological Atmospheric Pilot Experiment-Modelisation du Bilan Hydrique (HAPEX-MOBILHY; Andre et al. 1998)] and then use of such datasets to test and improve land surface models (LSMs) in the Project for Intercomparison of Land Surface Parameterization Schemes (PILPS; Pittman and Henderson-Sellers 1998).

The land surface component of IHOP_2002 was designed to 1) document the effects of surface properties on convective boundary layer structure and evolution, 2) evaluate LSMs and their components (hydrology, vegetation biophysics, atmospheric

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