

PREFACE

Cooperative Atmosphere–Surface Exchange Study-1999

This special issue of the *Journal of the Atmospheric Sciences* is devoted to papers dealing with the Cooperative Atmosphere–Surface Exchange Study-1999 (CASES-99) and dedicated to Dr. William Bluman, professor emeritus in the Program of Atmospheric and Oceanic Sciences at the University of Colorado at Boulder and initiator of CASES-99, who died on 23 April 2002 at the age of 70 (Necrology, BAMS 2003, **84**, 505–506).

The CASES-99 field experiment, conducted during October 1999, over nearly flat terrain in southeastern Kansas, was designed to investigate the nocturnal stable boundary layer, its associated phenomena (internal gravity waves, Kelvin–Helmholtz shear instabilities, low-level jets, density currents, and other sources of intermittent turbulence events), their contributions to the turbulent fluxes of momentum, heat, and moisture, and the evening and morning transitions.

The papers presented in this special issue cover a broad range of subjects on the stable boundary layer, including the low-level jet, ducted gravity waves, terrain effect on surface temperature variation, instrument development to measure finescale turbulence in the nocturnal boundary layer, nocturnal boundary layer structure, modeling of turbulent fluxes, and sound propagation.

Dr. William Blumen was the progenitor of CASES-99; he was dedicated to formulating CASES-99 from the ground up. Bill spent many days driving around the countryside of southeastern Kansas in his search for the central site for CASES-99, in search of landowners to obtain permission, in negotiations to see if cattle could be removed from the premises, waiting at the offices of the local county seat for the maps required, setting up instrumentation, and, finally, spending many cold, nighttime hours directing aircraft and remote sensing field observations. Thus, we present this CASES-99 special issue to the scientific community in honor of Dr. William Blumen.

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Guest Editors