

**NOTE TIME CORRECTION**

# *The RAL Seminar Series*

**NCAR**

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## **Use of Radar Observations to Improve Numerical Prediction of Convective Storms**

by

**Juanzhen Sun**

MMM/RAL

NCAR

*Wednesday, 30 March 2005**Foothills Lab, Building 2, Auditorium, Room 1022, 3:30 p.m.*

Accurate prediction of the location and timing of convective storms has been a long-standing challenge due, to a large extent, to uncertainties in model initialization and parameterization. Since its advent, Doppler radar has been used successfully for severe weather detection and warning. However, until recent years, radar data have not been incorporated into atmospheric models for numerical prediction of convection. In this presentation, the potential of using radar observations to improve initialization and microphysical parameterization is examined. Radar observations are assimilated into a warm-rain cloud model using a four-dimensional variation data assimilation technique. Experiments are performed to demonstrate that, through data assimilation, we are able to determine model initial conditions as well as some of the parameters in the microphysical scheme. The potential of using radar observations to improve raindrop size distribution, and hence microphysical parameterization, is also examined. The impact of radar observations on short-term prediction of convective storms is evaluated. We will also discuss future challenges for radar data assimilation.

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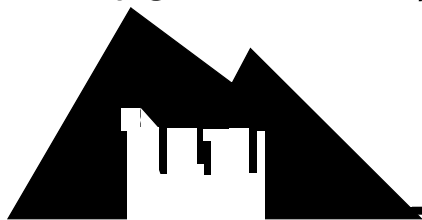
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