
NCAR
JOINT SEMINAR
MMM/EOL

**Observations of Wind and Waves with the
Raman-Shifted Eye-Safe Aerosol Lidar (REAL)**

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This seminar will describe how 2-component vector wind fields have been retrieved from nearly horizontal scans of the Raman-shifted Eye-safe Aerosol Lidar (REAL) using the cross-correlation technique and how the resulting air motion vectors compare with coincident sonic anemometer data obtained during the 2007 Canopy Horizontal Array Turbulence Study (CHATS). The analysis shows that the two very different methods of wind measurements have the best correlation when winds are light and the atmosphere tends toward stability. In addition, the seminar will present observations of fine-scale internal waves (wavelengths ranging from 40 - 100 m) obtained by the REAL and the vertical array of anemometers on the NCAR ISFF 30 m tower. The anemometer data confirms the hypothesis that the waves in the backscatter images are the result of oscillating vertical air motion. Together, these new observations of surface layer wind fields and gravity waves demonstrate the usefulness of a high-performance, eye-safe, direct-detection aerosol lidar to reveal microscale structure and dynamics, especially in the stable, nocturnal, weak-wind regime.

Tuesday, 24 July 2012, 3:30 PM
Refreshments 3:15 PM
NCAR-Foothills Laboratory
3450 Mitchell Lane
Bldg 2 – Small Seminar Room 1001