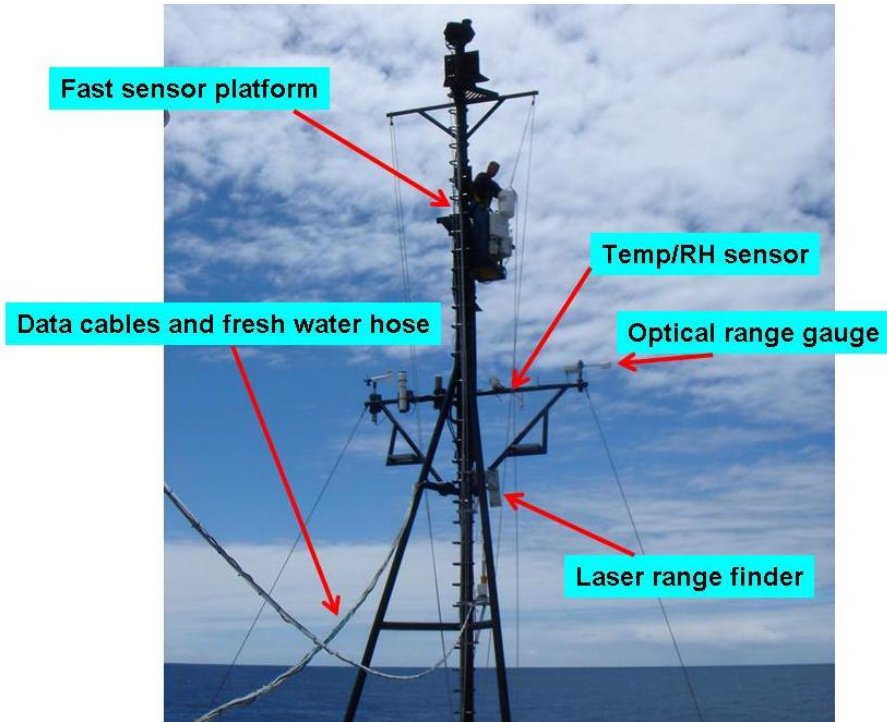


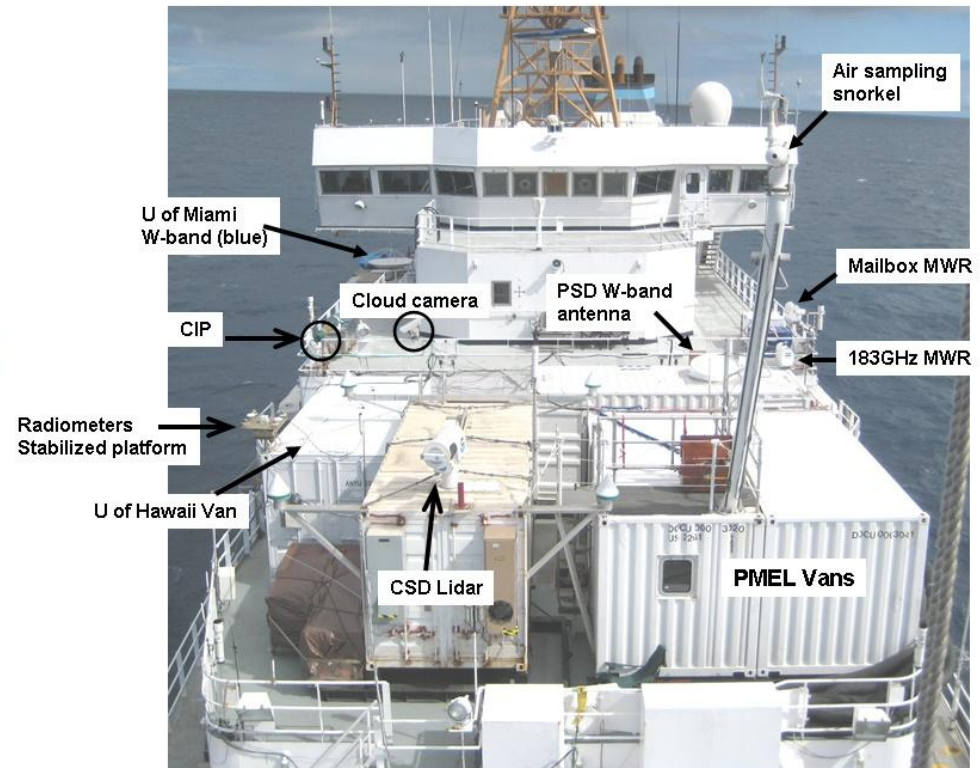
R/V Revelle Atmospheric Sensors

- Fluxes and Near-Surface Meteorology – Uconn (Edson), ESRL/PSD (Fairall), OSU (deSzoeker)
- C-band Radar – CSU (Rutledge)
- W-band Radar – ESRL/PSD (Fairall)
- Microwave Radiometer – U Miami (Zuidema)
- Doppler Lidar – ESRL/CSD (Brewer)
- Water isotopic composition – CSU (Noone)
- Wind Profiling Radar – NCAR (Brown)
- Balloon Sounding System - NCAR (Brown)

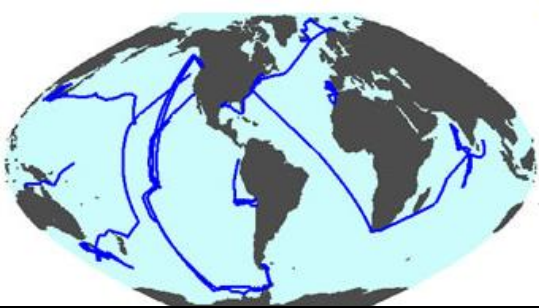
Example from VOCALS 2008 Field Program



Flux and near-surface meteorology sensors on the jactstaff



Seatainer laboratories on Ron Brown during VOCALS 2008. The PMEL, CSD Lidar, and PSD W-band vans will go on DYNAMO



Pacific Marine Environmental Laboratory
Atmospheric Chemistry Group
Tim Bates & Patricia Quinn, PIs
<http://saga.pmel.noaa.gov>



Aerosol Measurements During DYNAMO

Shipboard measurements of the physical, chemical, optical, and cloud nucleating properties of aerosols to elucidate the processes and cause-and-effect relationships between aerosols, cloud physics, and precipitation.

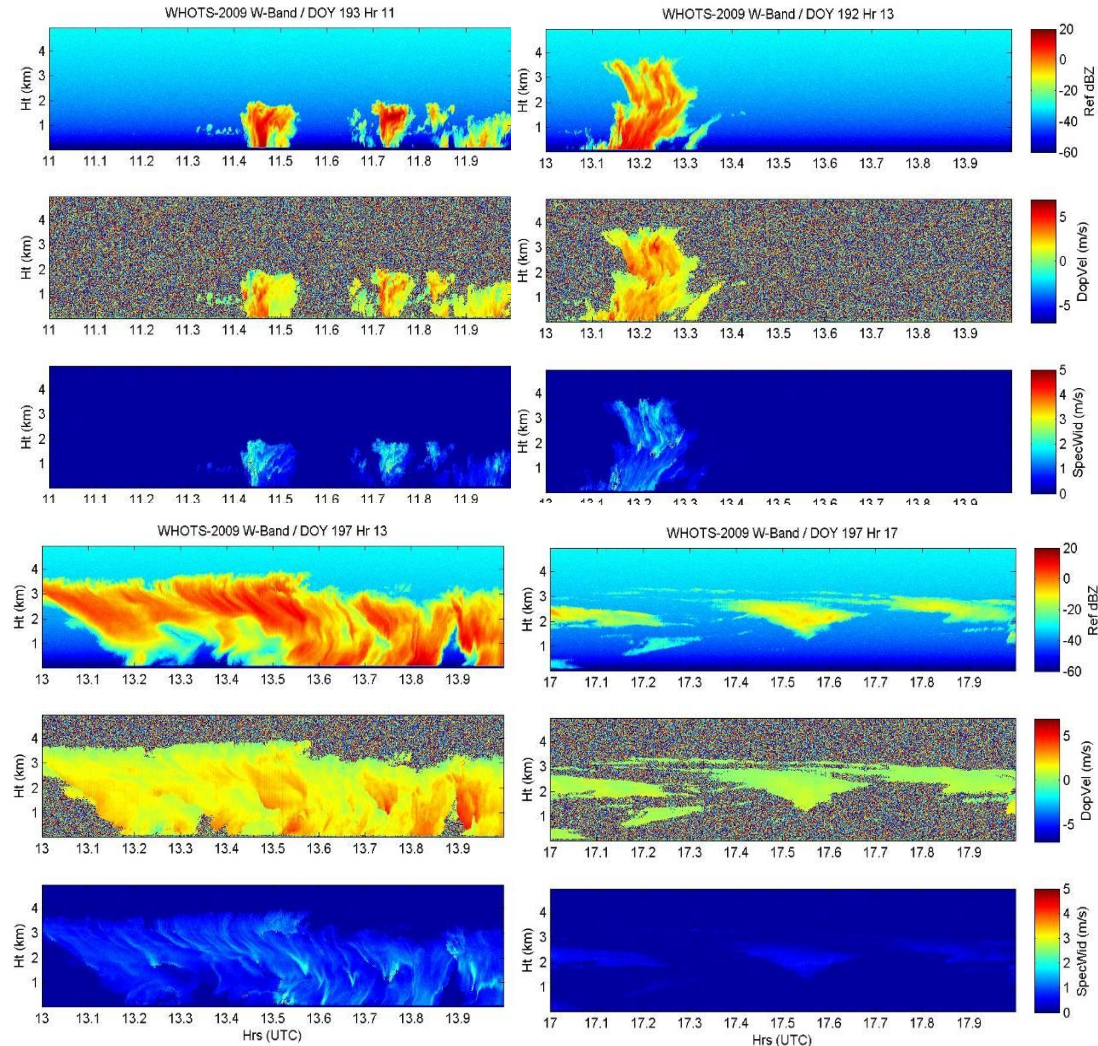
Time series of aerosol parameters and derived empirical relationships that can be used by cloud-resolving and GCMs.

ESRL/PSD W-Band Stabilized Doppler Cloud Radar

94-Ghz, 25-m vertical resolution, 0.3 s dwell

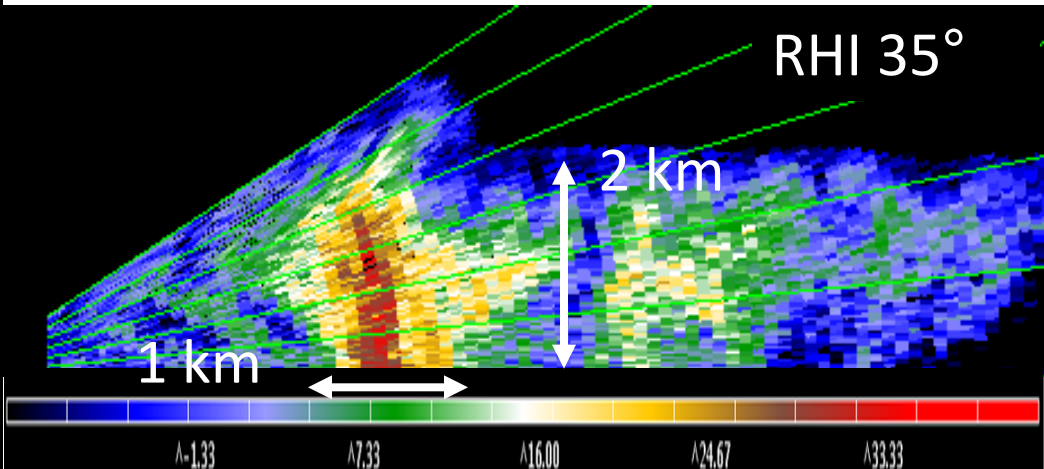
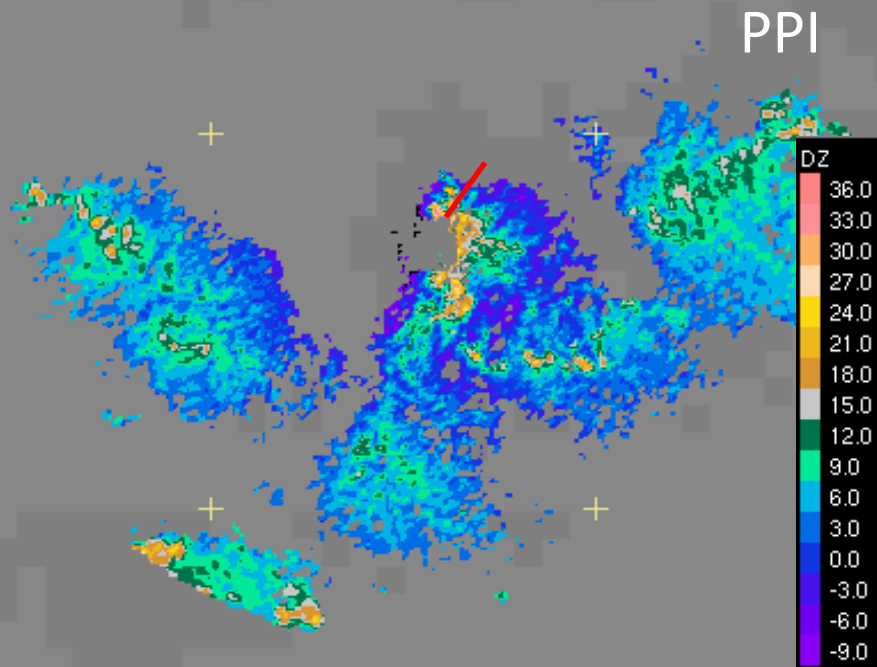


Radar and Stabilizer in seatainer during VOCALS 2008



Samples of 1-hr time-ht cross sections during various stages of growing, mature, and decaying trade BL convection

C-Band & W-Band in Weak Precipitation



VOCALS2008 W-Band* YD 325 Hr 11

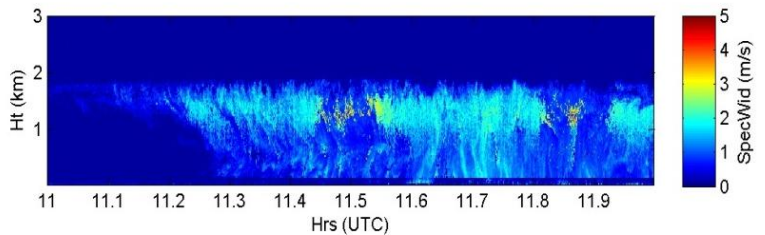
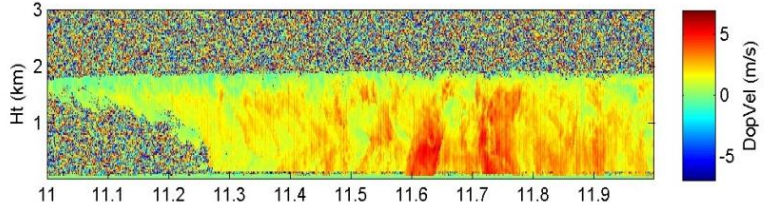
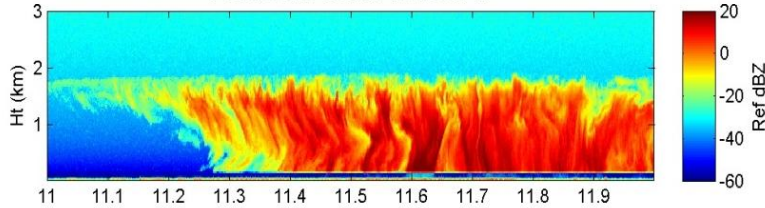


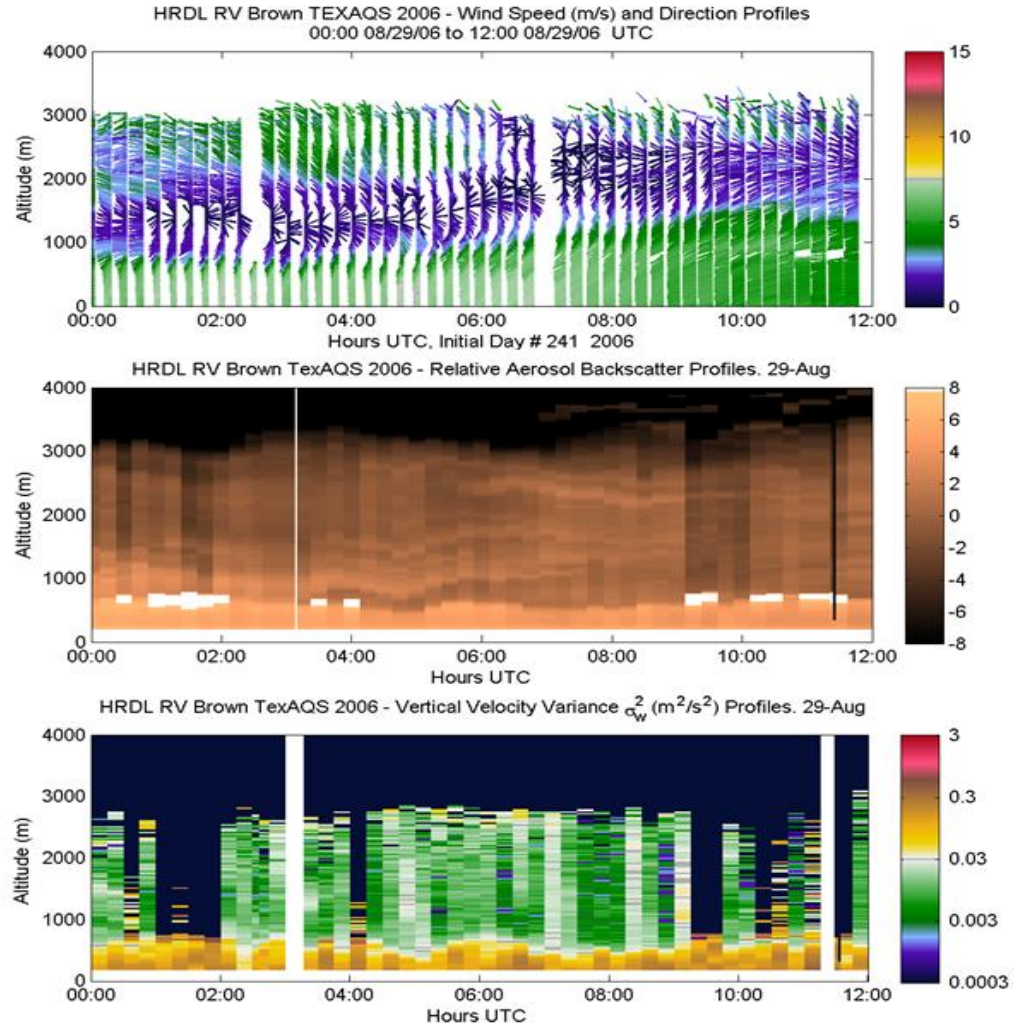
PHOTO IN DIRECTION OF RHI



ESRL/CSD Doppler Lidar



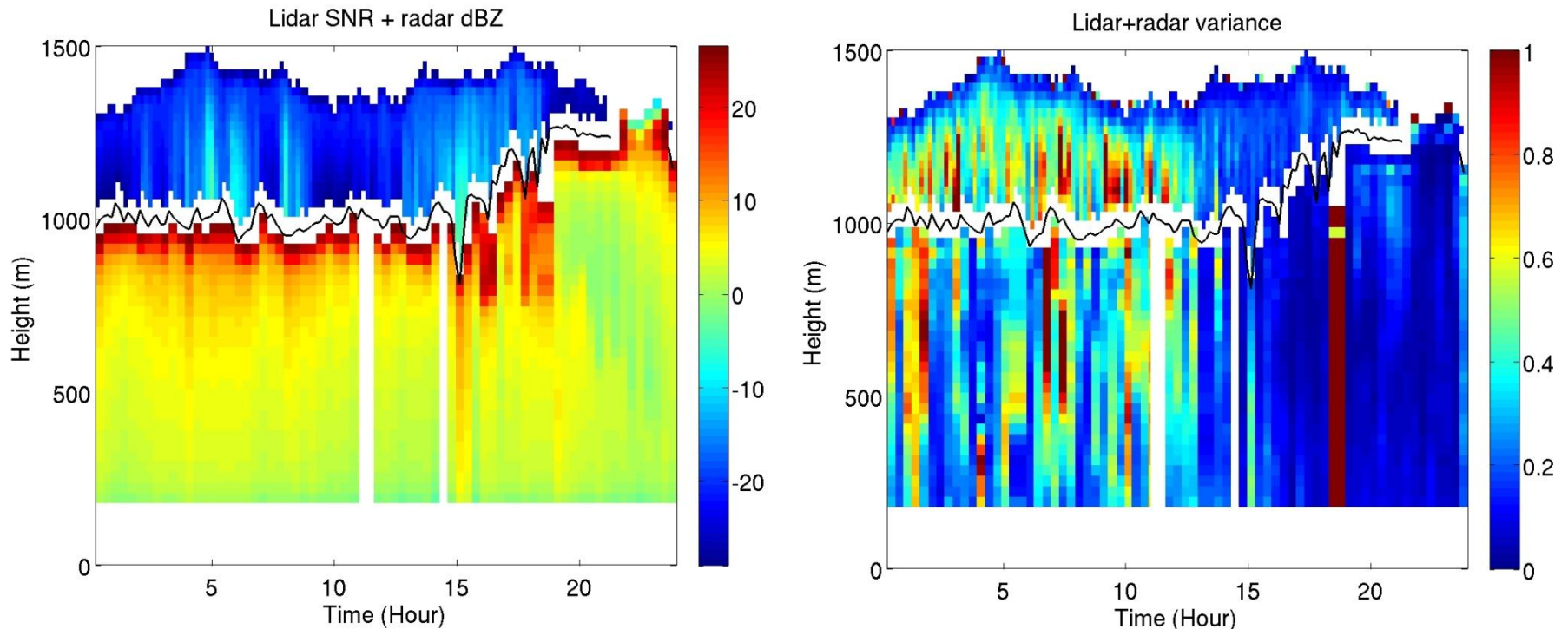
HRDL seatainer mounted on the Fantail of the same ship during TEXAQS study in 2006. The outriggers hold GPS antennae associated with the lidar's motion compensation /stabilization system.



Twelve hour archive images, automatically loaded to the web in real time, of profiles measured by HRDL during the Second Texas Air Quality Study in 2006. The top panel is horizontal wind speed and direction, the middle plot is aerosol backscatter intensity, and the bottom plot is vertical velocity variance (w'^2).

Combined W-Band & Lidar Statistics

Full BL properties by linking subcloud (lidar) and incloud (radar) returns



24-hr time-height cross section of backscatter (left panel) and vertical velocity variance (right panel) from stratocumulus-topped FL during VOCALS 2008. Cloud top is 1.3-1.5 km (top of radar returns); cloud base is the solid line. Radar variables above cloud base and lidar below cloud base. Turbulence is suppressed during the day by solar heating in the cloud.