

Workshop History/Motivation

The Lower Atmospheric Observing Facilities Workshop*

Meeting the Challenges of Climate System Science

(focused on climate)

18-19 June 2012

Boulder, Colorado, USA

Final Report 11 June 2013

Lead Author: *Ronald B. Smith, Yale University*

Workshop Organizers: *R. E. Carbone, NCAR; Xubin Zeng, University of Arizona*

www.eol.ucar.edu

EOL currently operates a microwave radiometer for temperature profiling but lacks a complimentary capability for microwave retrievals of water vapor and liquid water, either vertically-resolved or integrated

e. Promising new instruments (candidate LAOF instruments)

A number of new and promising instruments have been identified for application to the tropical atmosphere.

Temperature and water vapor

- Automated sounding launchers (ships and land)
- GPS radio occultation (satellite, airborne, and ground-based)
- DIAL and Raman lidar
- Multi-Channel Microwave Radiometer (MWR)
- Automated remote soundings with large number of sondes
- Isotopes with real-time spectral analysis (airborne/shipborne/ground-based)

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High priority instrument/platforms:

- airborne radar
- aerosols
- vertical profiling (humidity, aerosols)

from LAOF report

NSF deployment pool now contains two airborne cloud radars and two lidars, but lacks radiometers providing geophysical constraints for retrievals&validation

what is the best way forward?

upon NSF's suggestion and
with EOL's support => this workshop

Workshop Objectives

- explore existing technology
- obtain recommendations from experts on the best and most appropriate capability for LAOF
*interest in both vertically-resolved and integrated WVP,
LWP measurement capabilities*
- workshop report and recommendations to NSF

instrument considerations:

- breadth of application
- maturity of technology
- cost
- ease of integration with existing NSF deployment pool capabilities

from LAOF report

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among other findings.....

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