

# Microwave radiometry focus group

## Current situation and future challenges

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New high frequency radiometers

LWC retrievals

# New high-frequency MWRs

New ARM microwave radiometers use higher frequencies to improve detection of thin clouds

“Familiar” frequencies (20 to 30 GHz)

Challenge of higher frequencies 90, 150, 170...183.3 GHz

New radiometers: MWRHF (90/150), GVR, GVRP (170 to 190 GHz), new MWRs



**MWRHF**

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

**GVR**

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

**GVRP**

GVRP currently on the Ron Brown participating in the VAMOS Ocean-Cloud-Atmosphere-Land Study Regional Experiment (VOCALS-REX) in the South-East Pacific.

Supplement 2-channel retrievals of LWP from U. of Miami MWR and NOAA 90-GHz radiometer



High frequencies are important for increased sensitivity to LWP... however BEFORE we can develop retrievals:

1. Calibration

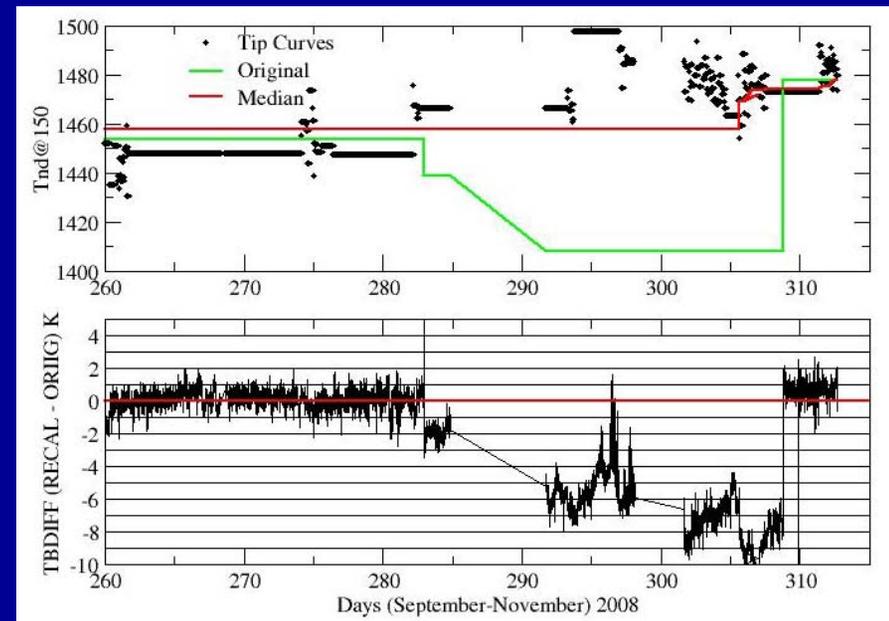
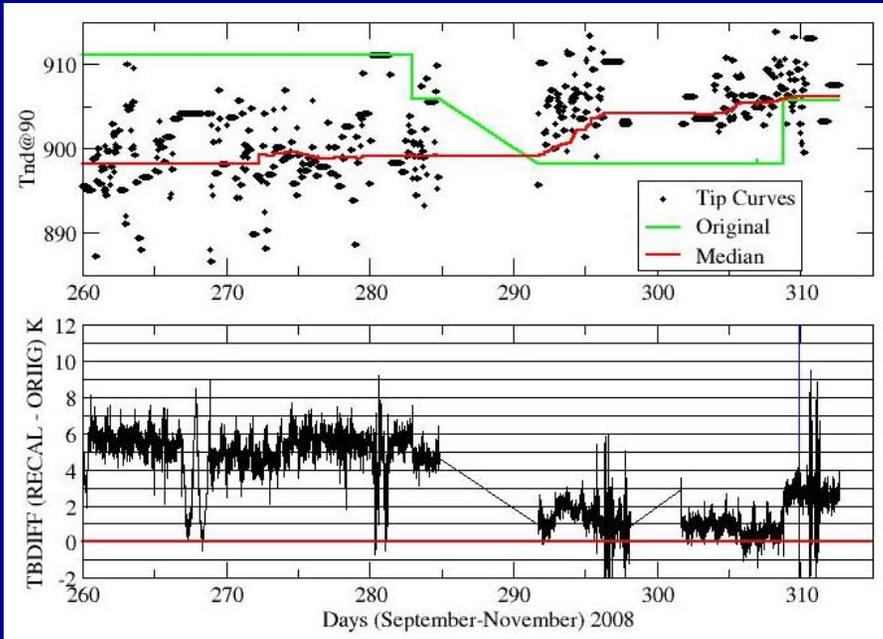
2. Modeling (water vapor continuum)

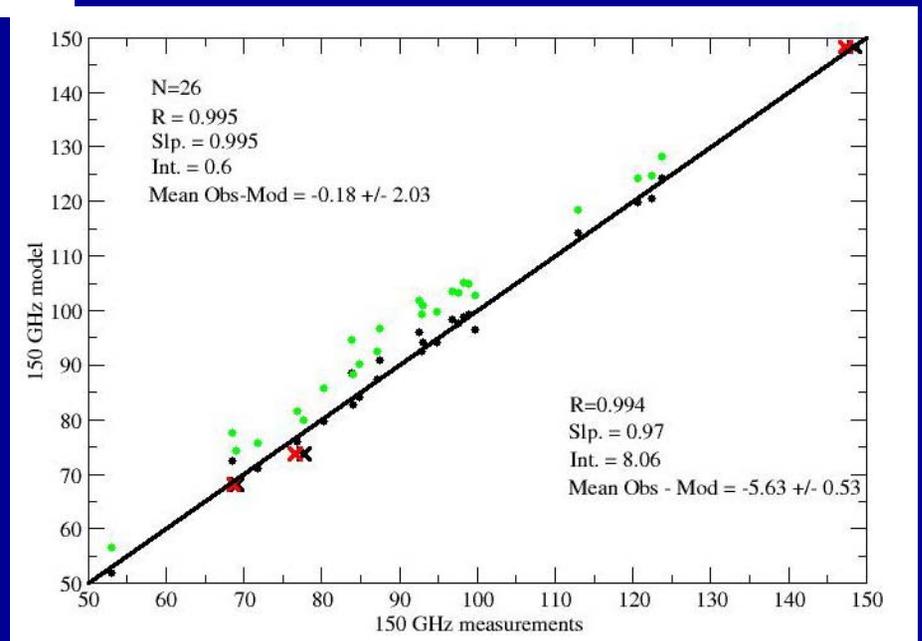
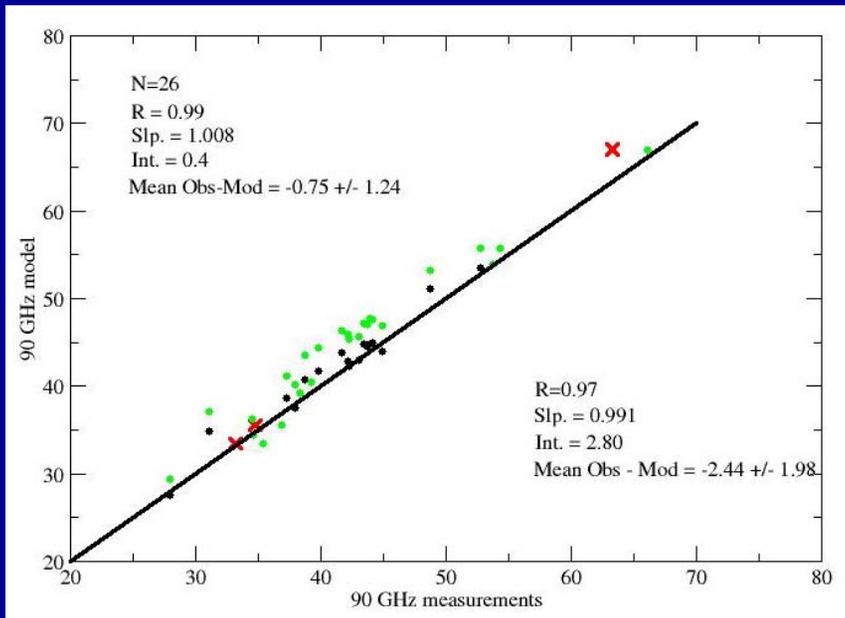
3. Liquid absorption models for supercooled water

...Retrievals

# 1) Calibration of high frequency channels

## Implementing and testing ARM calibration algorithm on 90-150 GHz channels





## Improvement of existing retrievals

- . Review of current limitations of ARM LWC retrievals from microwave radiometers
- . Development of a strategy to improve the retrievals and review of available integrated retrievals
- . Combination of active and passive sensors --  
Discussion