

Vertical Velocity Focus Group

ARM 2008 Science Team Meeting
Norfolk, VA
March 10-14

Background

The purpose of this new focus group is to develop vertical velocity ARM products suitable for modelers.

Vertical velocity measurements have been at the top of the priority list of the cloud modeling community for some time.

ARM response to their request has been slow.

Doppler measurements from ARM profiling radars operating at 915-MHz, 35-GHz and 94-GHz have been largely **unexploited**.

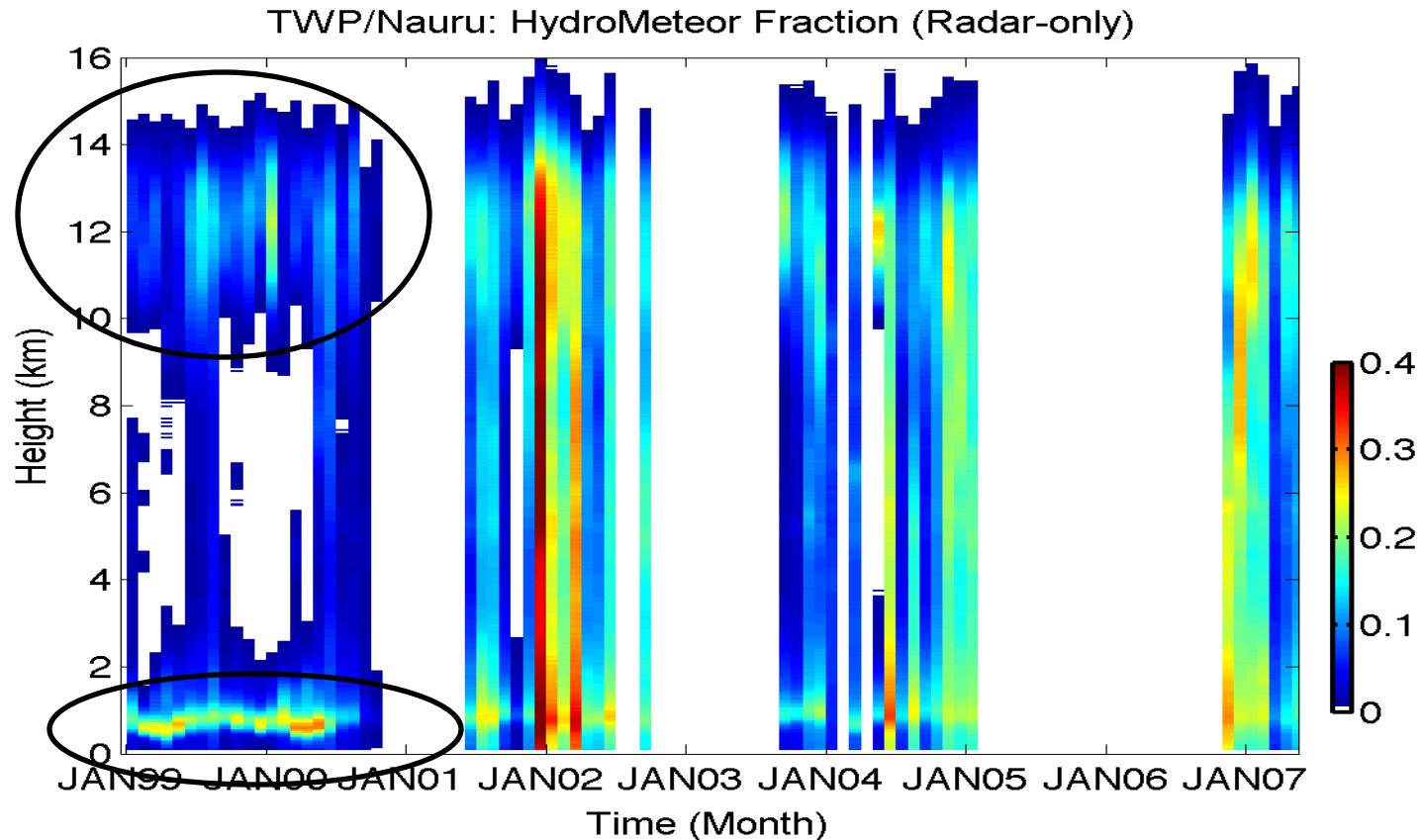
Consider this...

Using ARM datasets for evaluating and improving cloud parameterization in global climate models (GCMs) is not straightforward, due to gigantic scale mismatches.

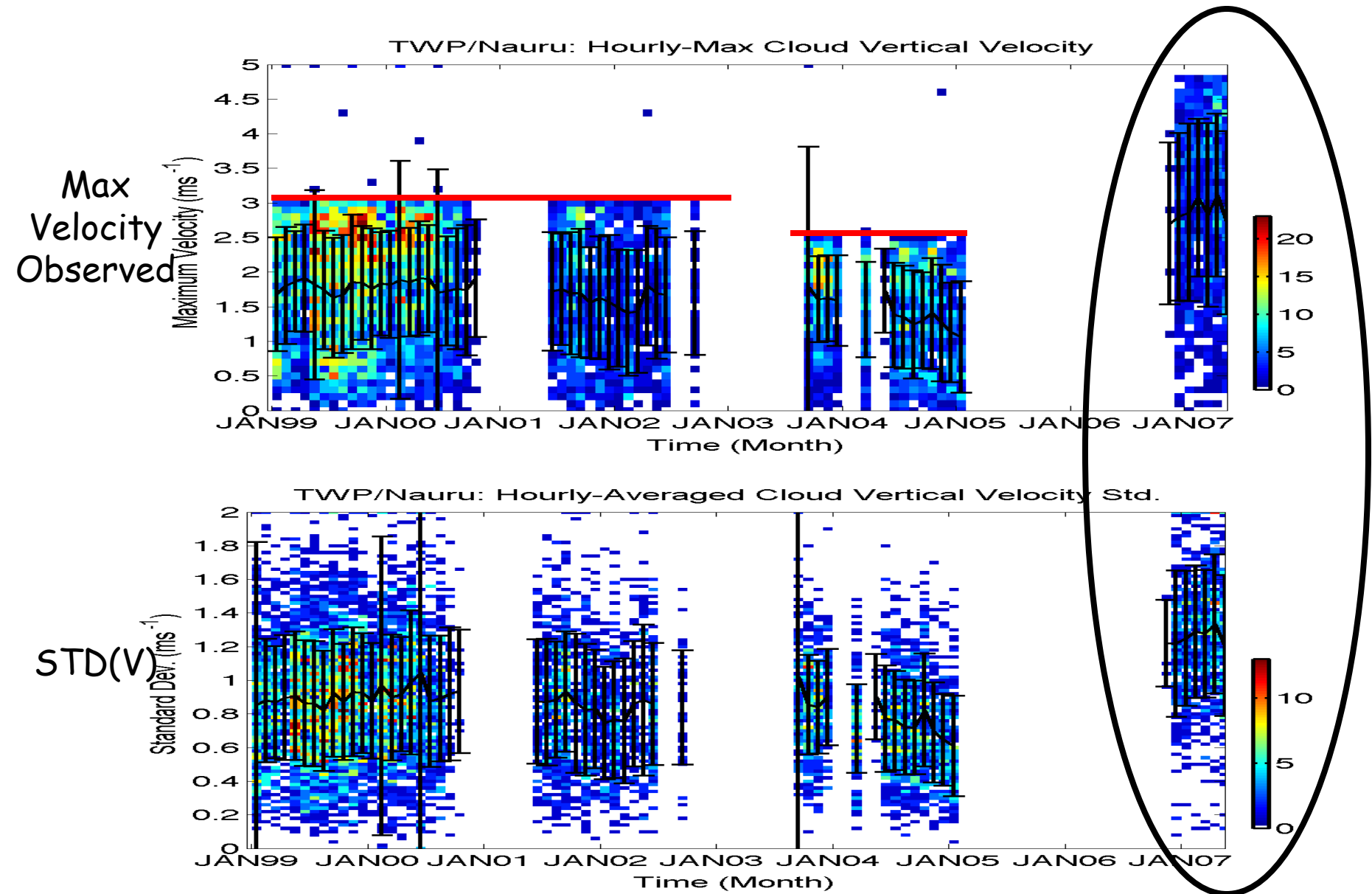
Most ARM instruments are suitable for cloud observations and have limited capabilities in precipitation

Looking only vertically drastically limits opportunities for observing the vertical velocities in precipitation.

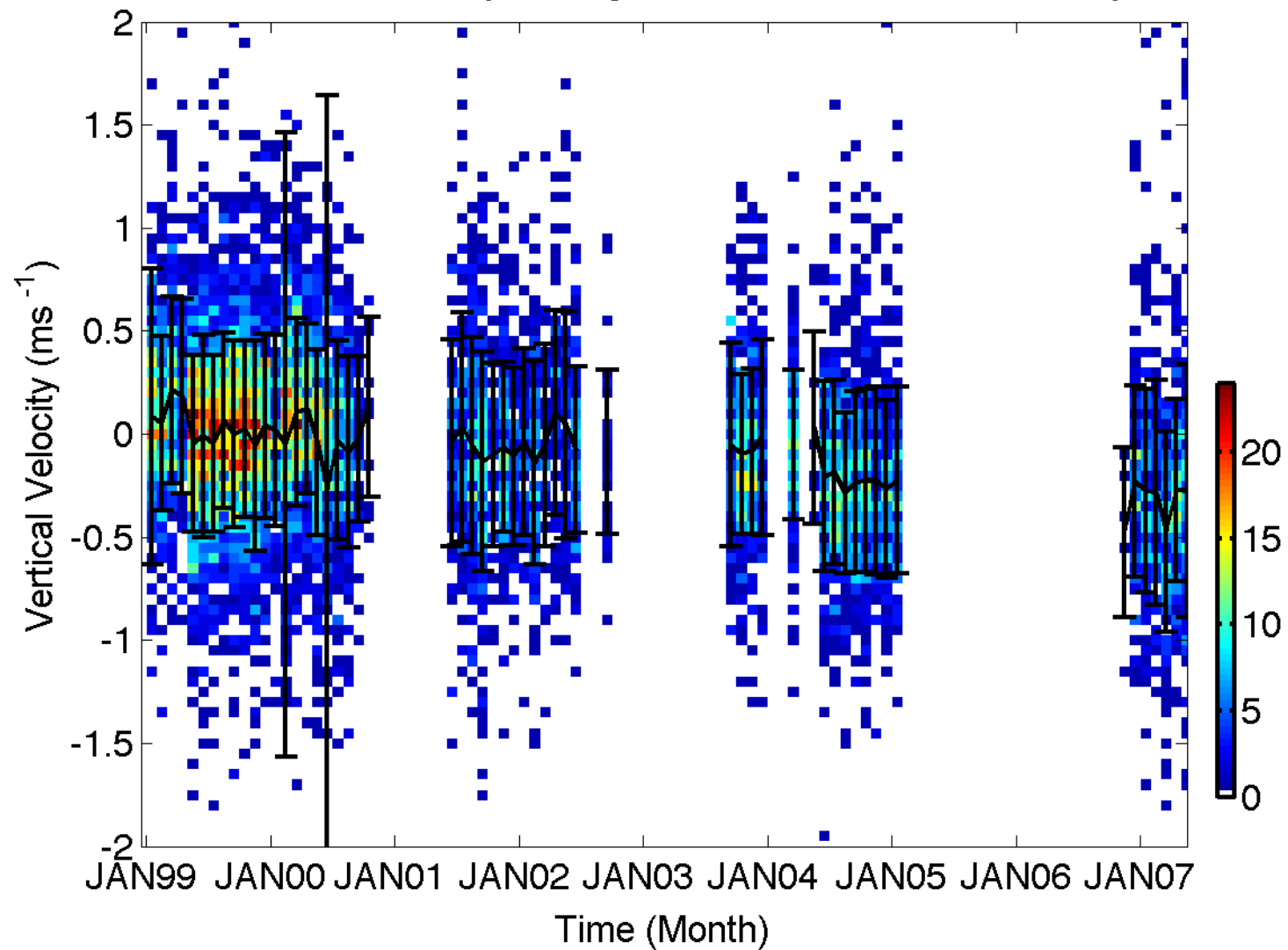
The cloud-sensitive ARM radars provide **unique** Doppler measurements of non-precipitating clouds



Progress has been made in our ability to observe the vertical velocity in clouds using the ARM MMCR's (Kollias et al., 2007).



TWP/Nauru: Hourly-Averaged Cloud Base Vertical Velocity



TWP/Nauru: Hourly-Averaged Cloud Top Vertical Velocity

