

# **Informing CERES optical depth retrieval with data from other sources**

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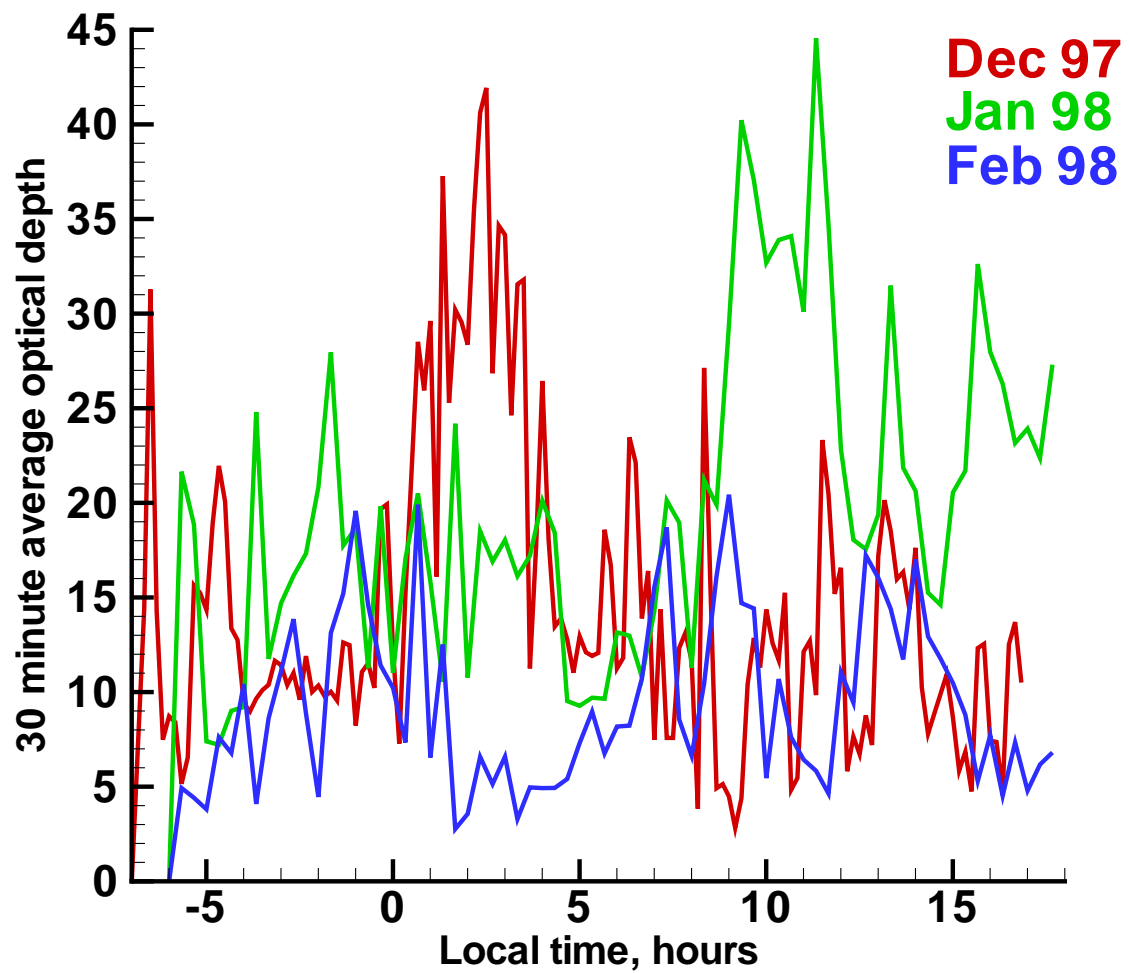
# CERES Questions

- **Optical Depth Retrieval**
  - Bias with viewing geometry
  - Bias with solar geometry

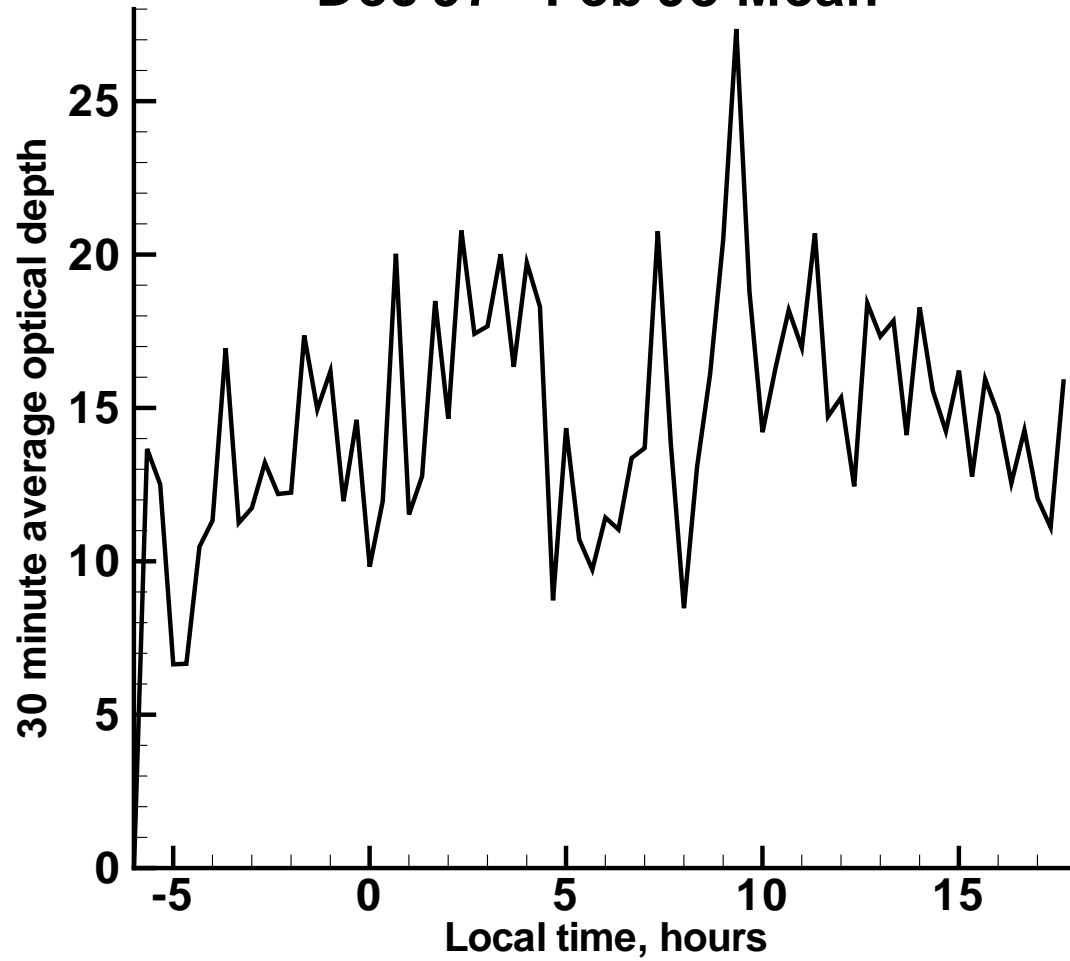
## Other Data Sources

- **Ground-based cloud measurements from ARM (SGP & Nauru)**
- **Theoretical retrievals with known truth from Landsat/SHDOM**

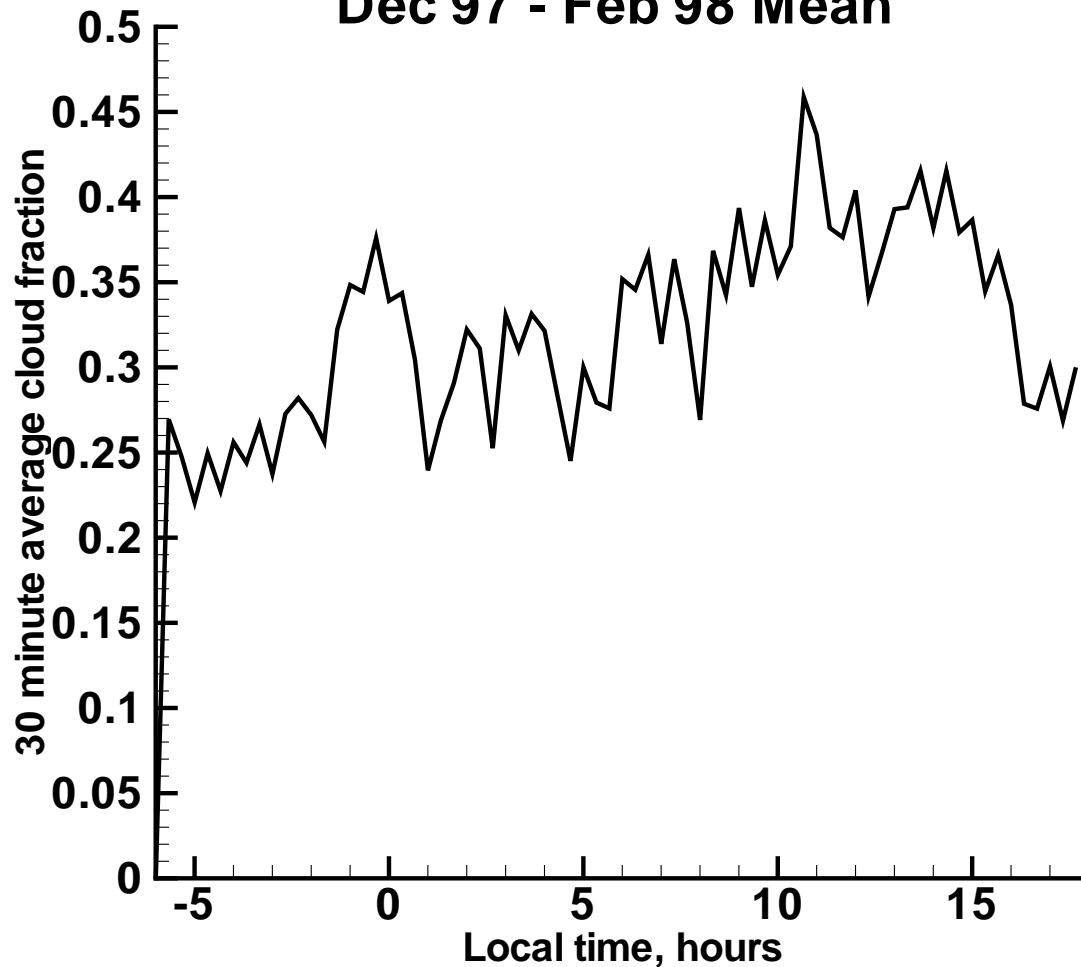
# ARM Southern Great Plains



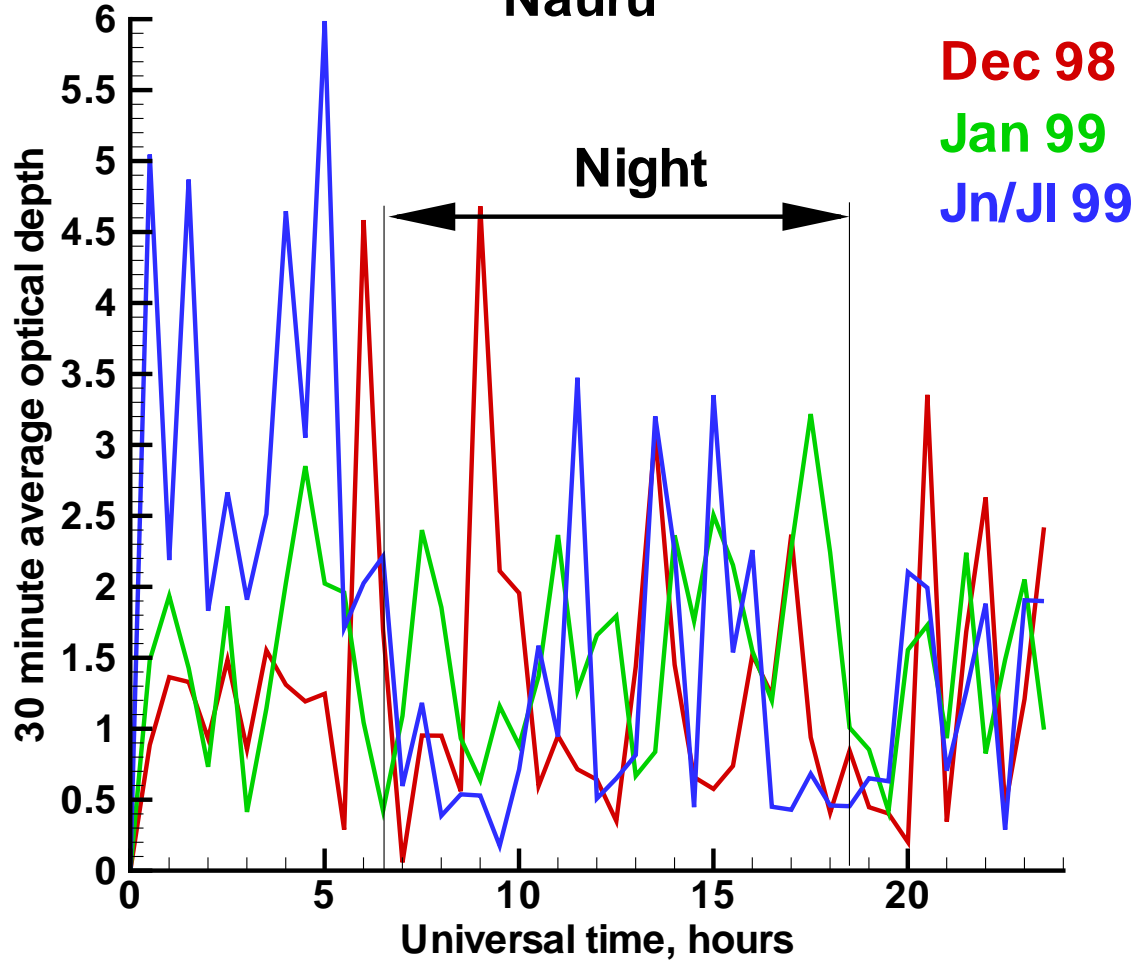
### ARM Southern Great Plains Dec 97 - Feb 98 Mean



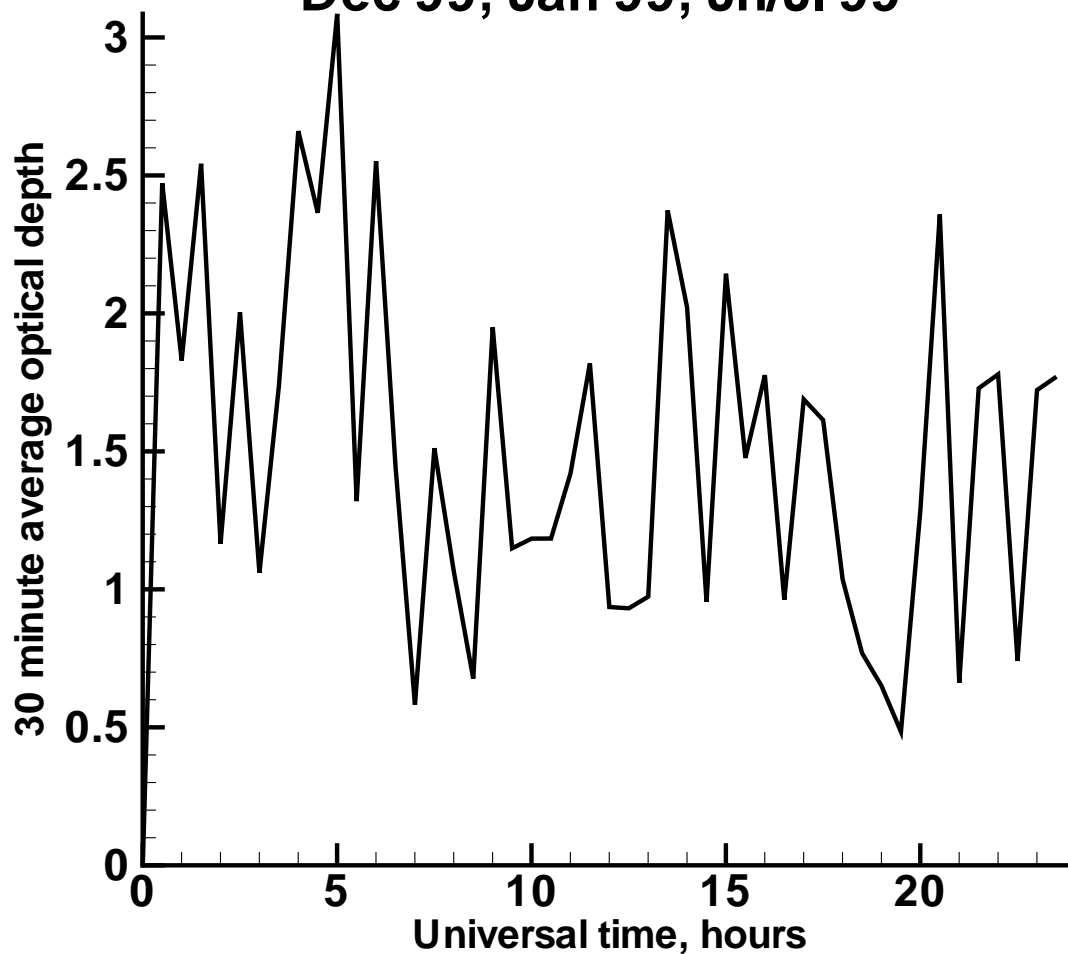
### ARM Southern Great Plains Dec 97 - Feb 98 Mean



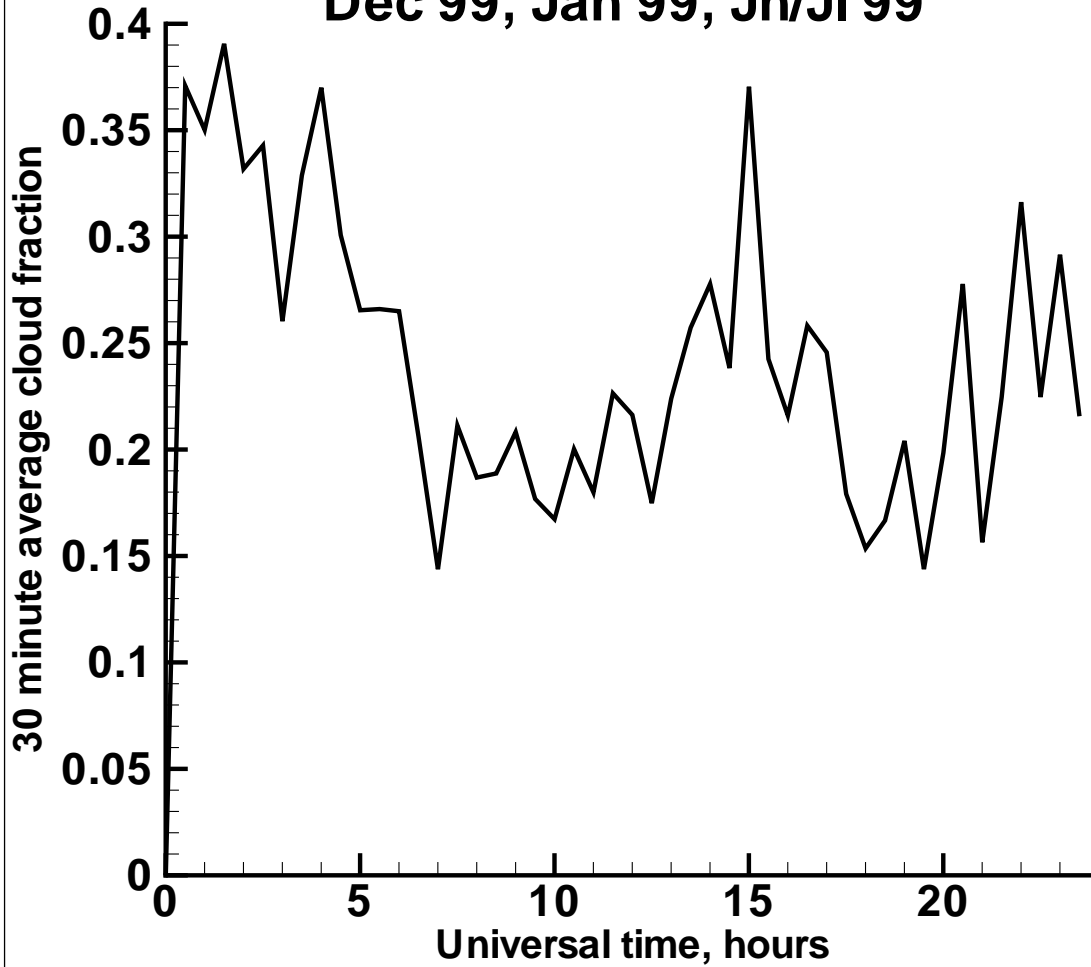
# ARM Tropical Western Pacific Nauru



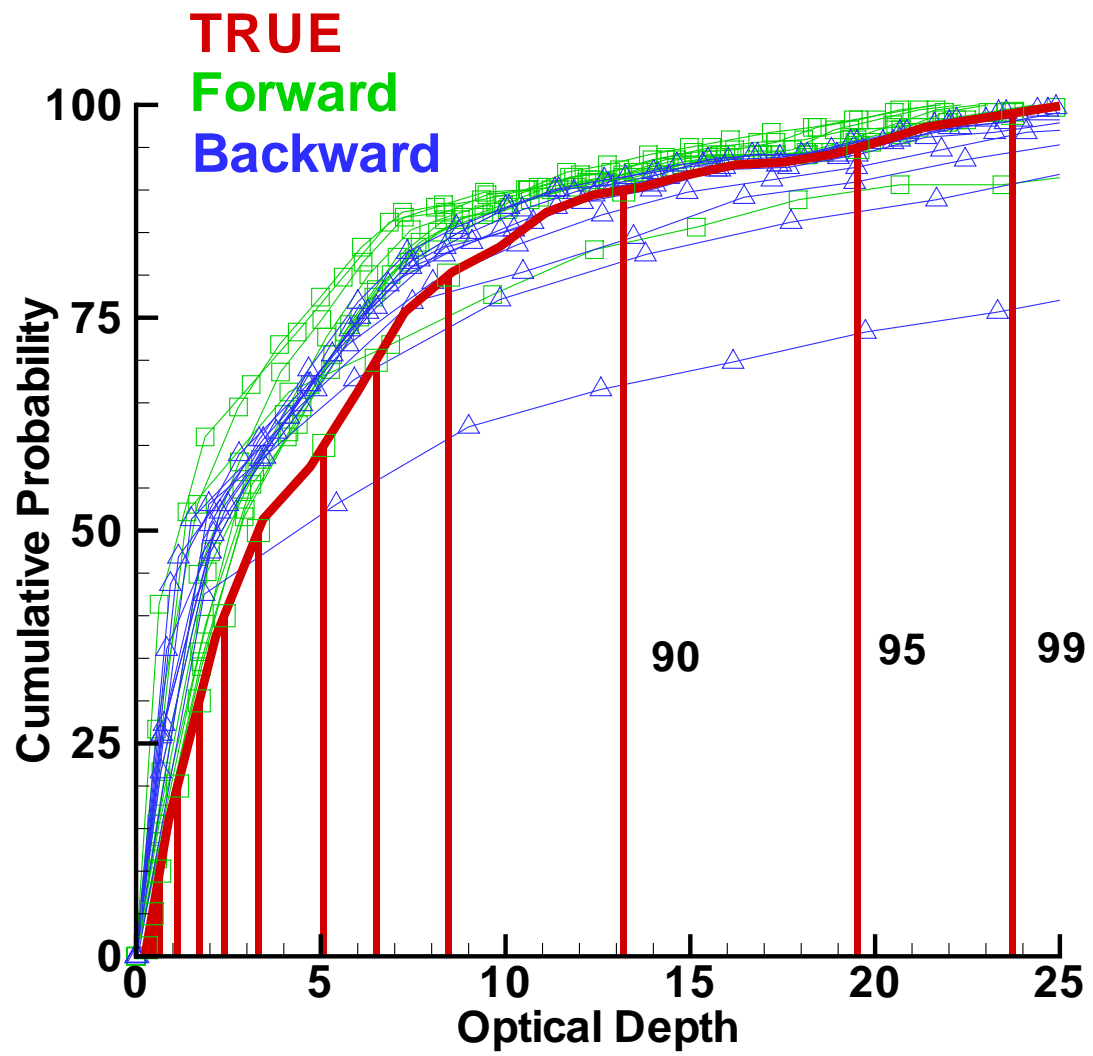
### ARM Tropical Western Pacific Dec 99, Jan 99, Jn/JI 99

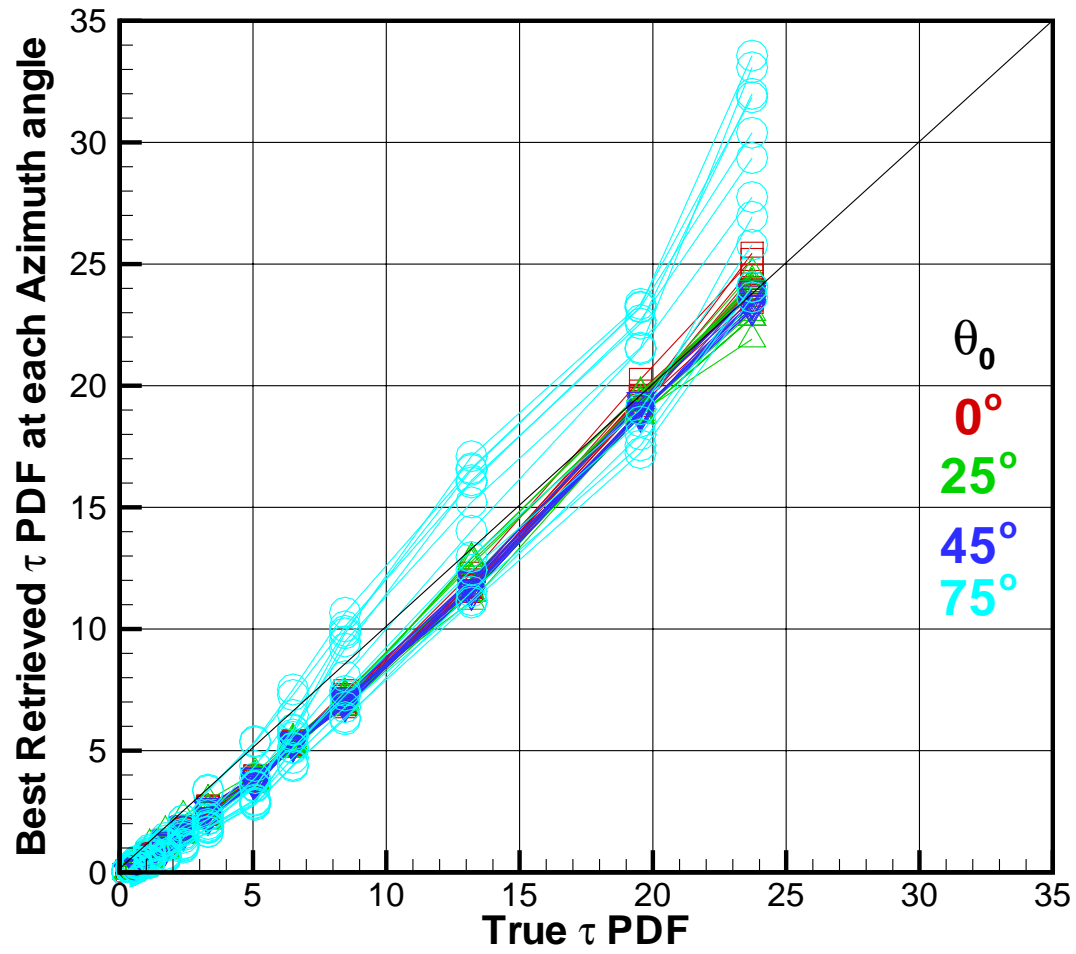


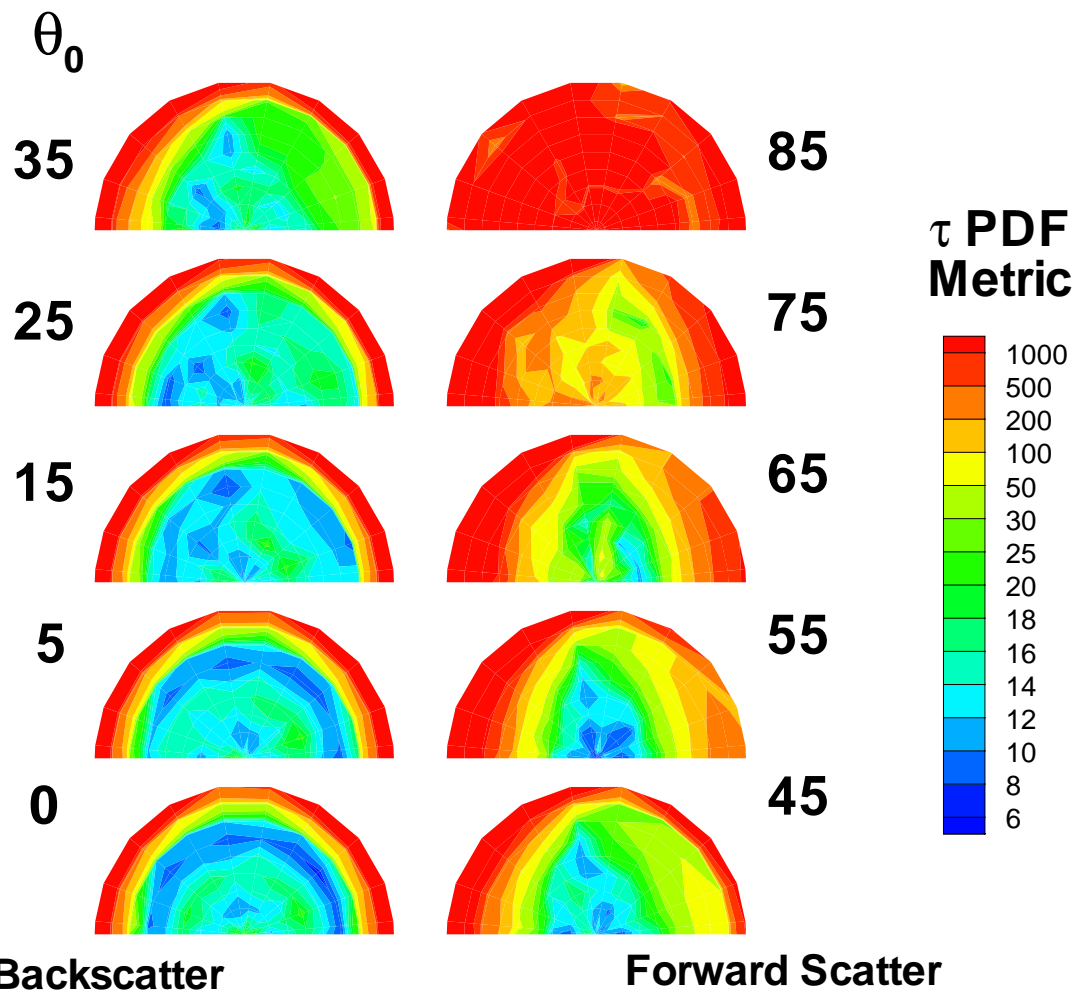
### ARM Tropical Western Pacific Dec 99, Jan 99, Jn/Jl 99











# Conclusions

- **Examined 3 months of cloud data at ARM SGP & Nauru**
  - Little evidence of cloud thickening over diurnal cycle
  
- **Looked for optical depth retrieval “sweet spot” in SHDOM calculations.**
  - Definitely present for high ( $\theta_0 < 30^\circ$ ) sun; not so clear for low sun
  
  - Around  $40\text{-}50^\circ$  view zenith