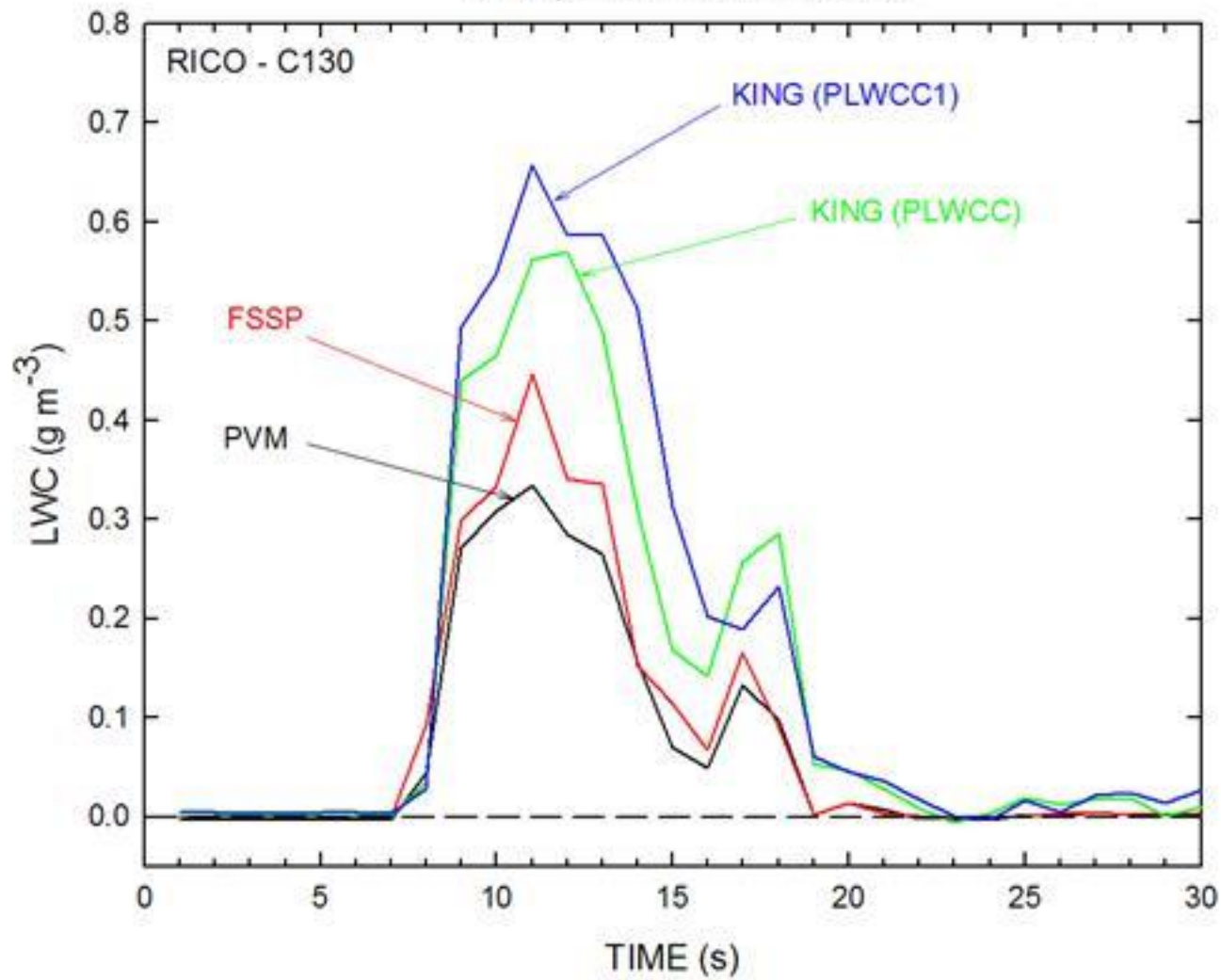
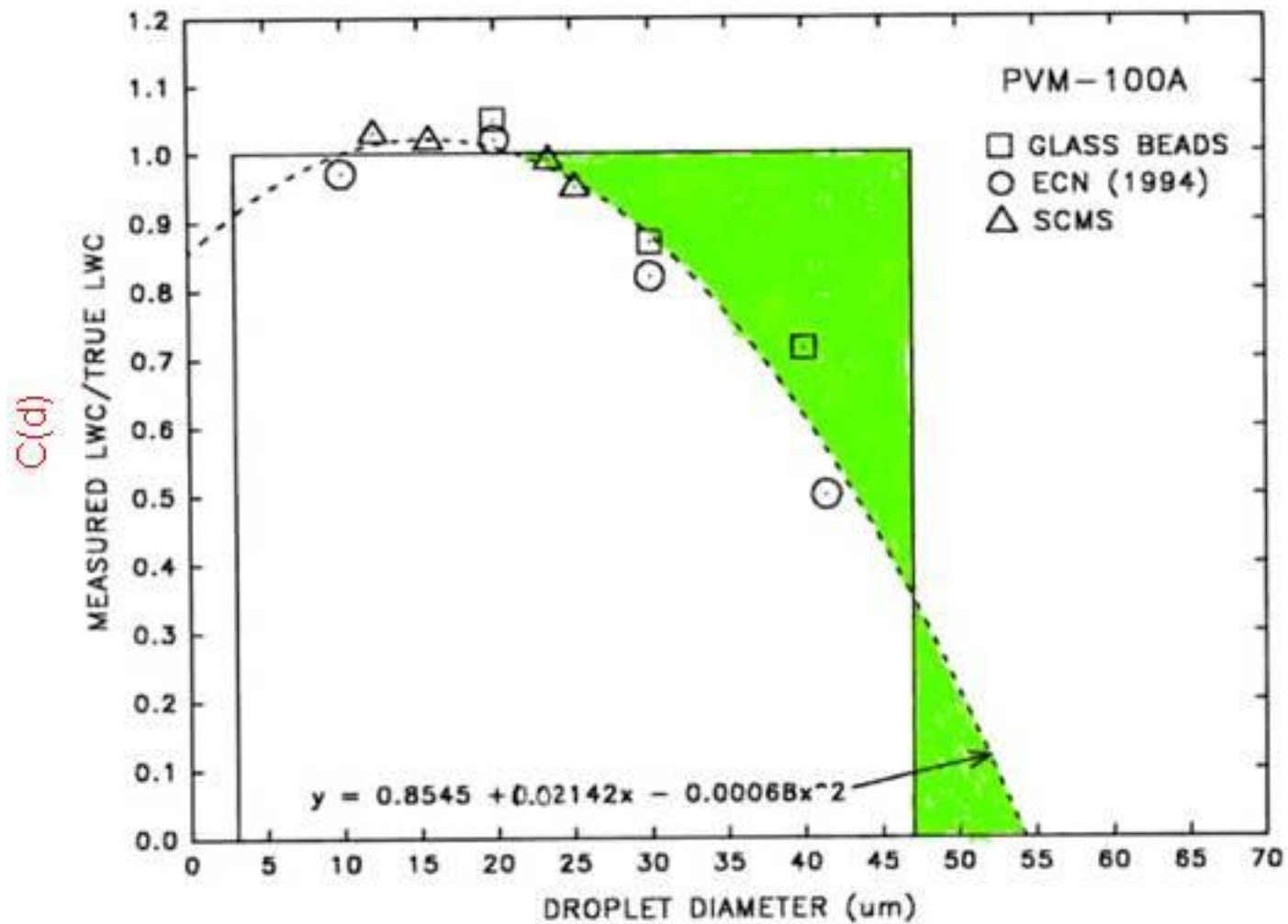


# Accuracy of LWC and dN/dD (C-130) ?

Herm Gerber

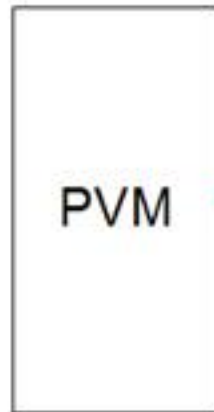
RF07; 18:14:50 - 18:15:19





reference PVM LWC to  
FSSP relative spectrum

(Assume LWC  
follows  $C(d)$ )



(assume relative  
sizing correct)

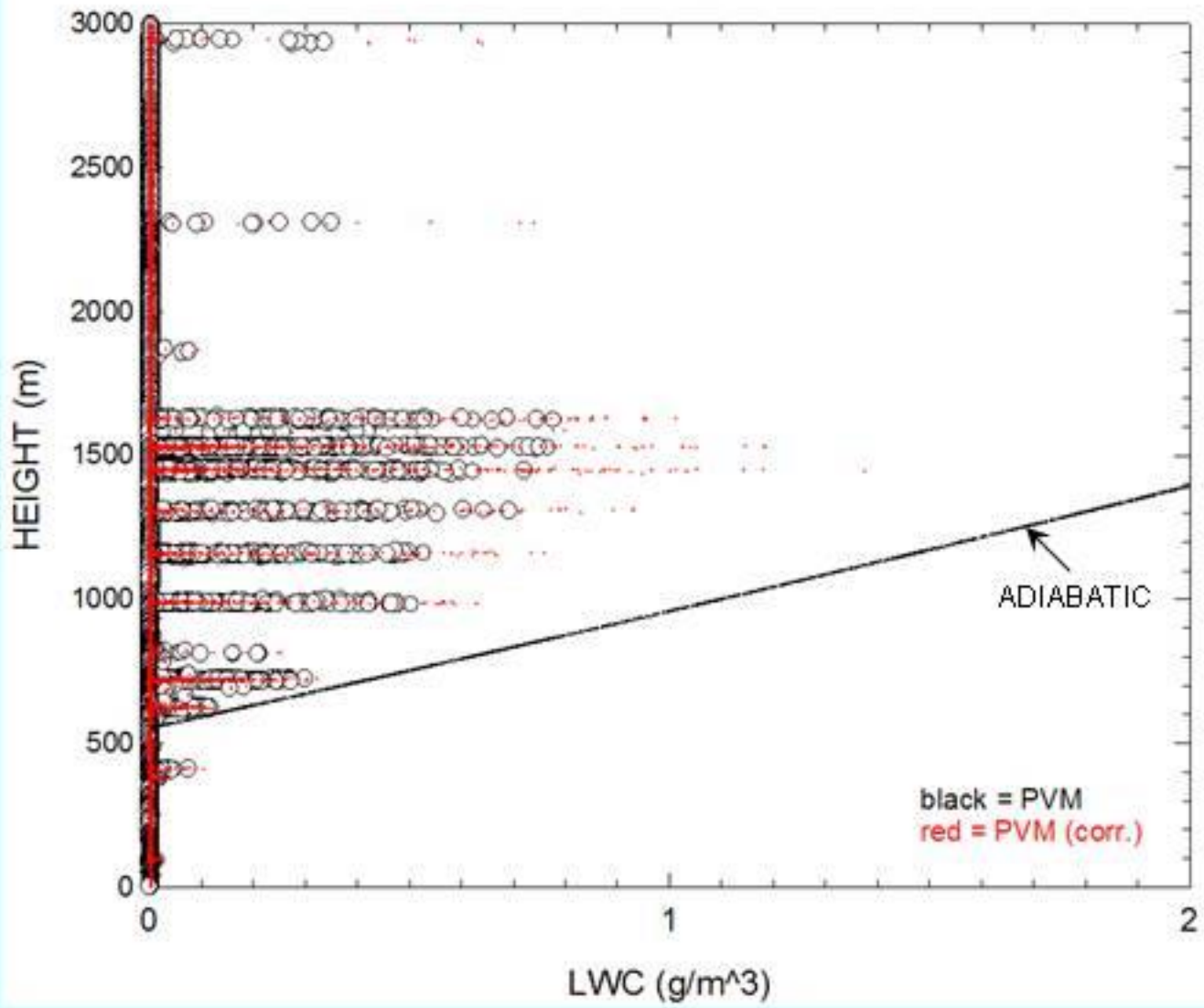


$$R = \frac{\boxed{LWC(\text{correct})}}{LWC(\text{measured})} \quad (\text{PVM})$$

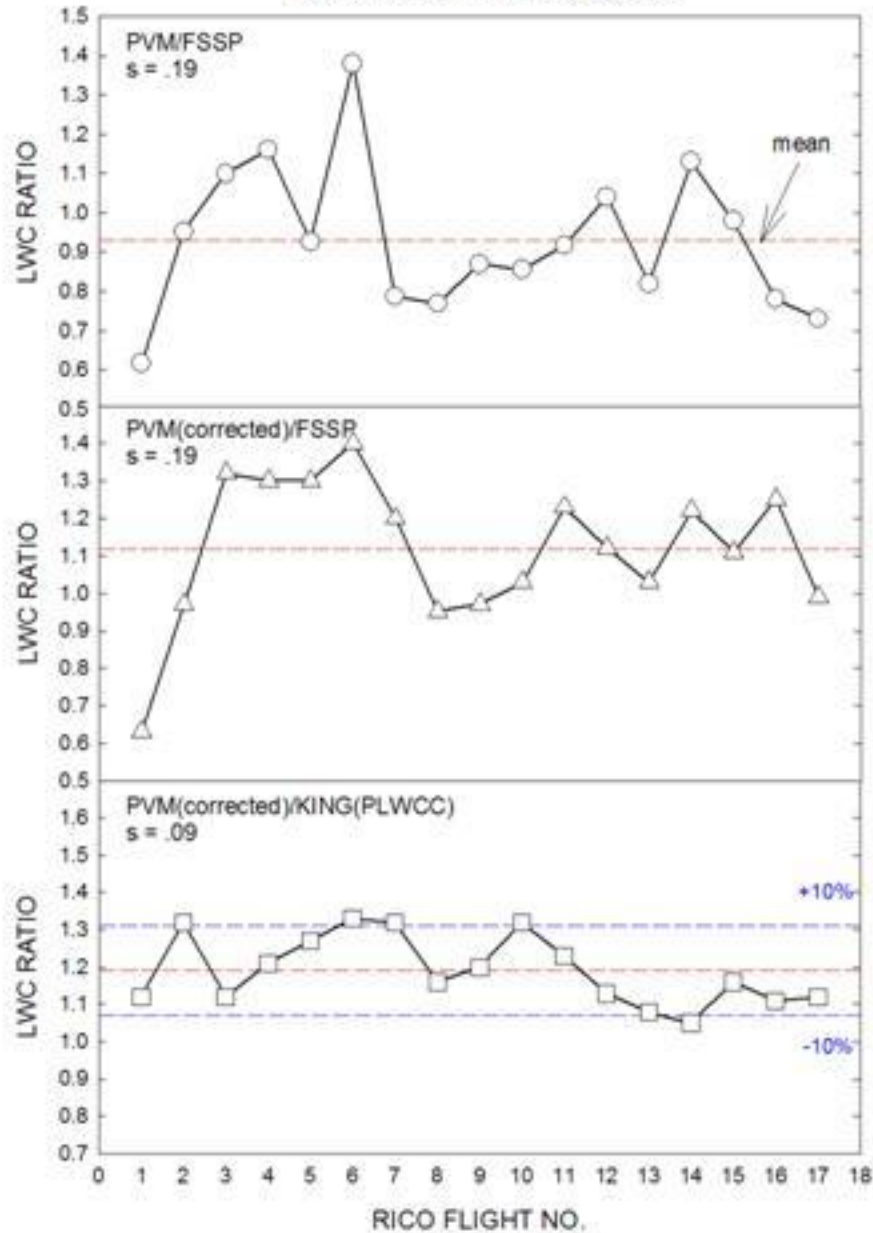
$$R = \frac{\sum d^3 f(d) \Delta d}{\sum d^3 C(d) f(d) \Delta d} \quad (\text{FSSP})$$

$$C(d) = 0.8545 + 0.02142d - 0.00068d^2 \quad (\text{PVM})$$

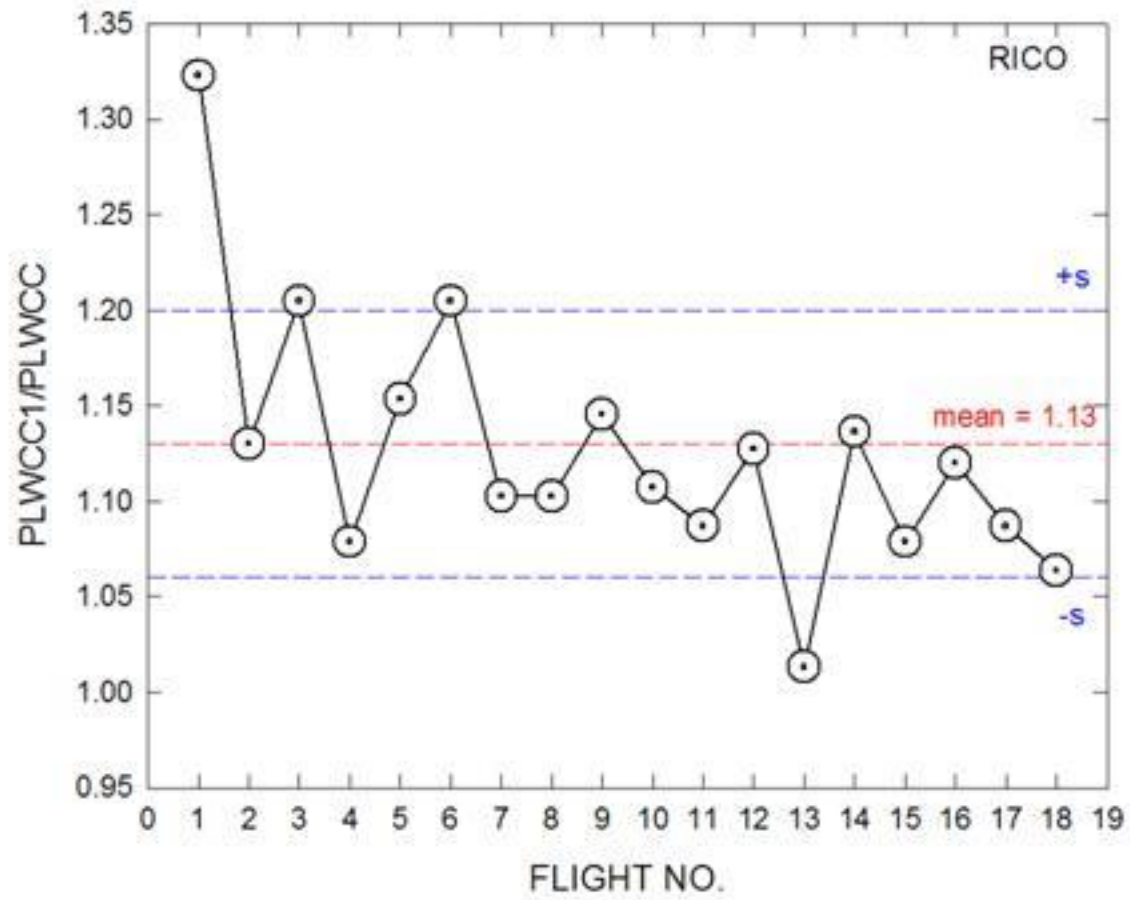
# RICO, rf07



### RICO LWC COMPARISONS

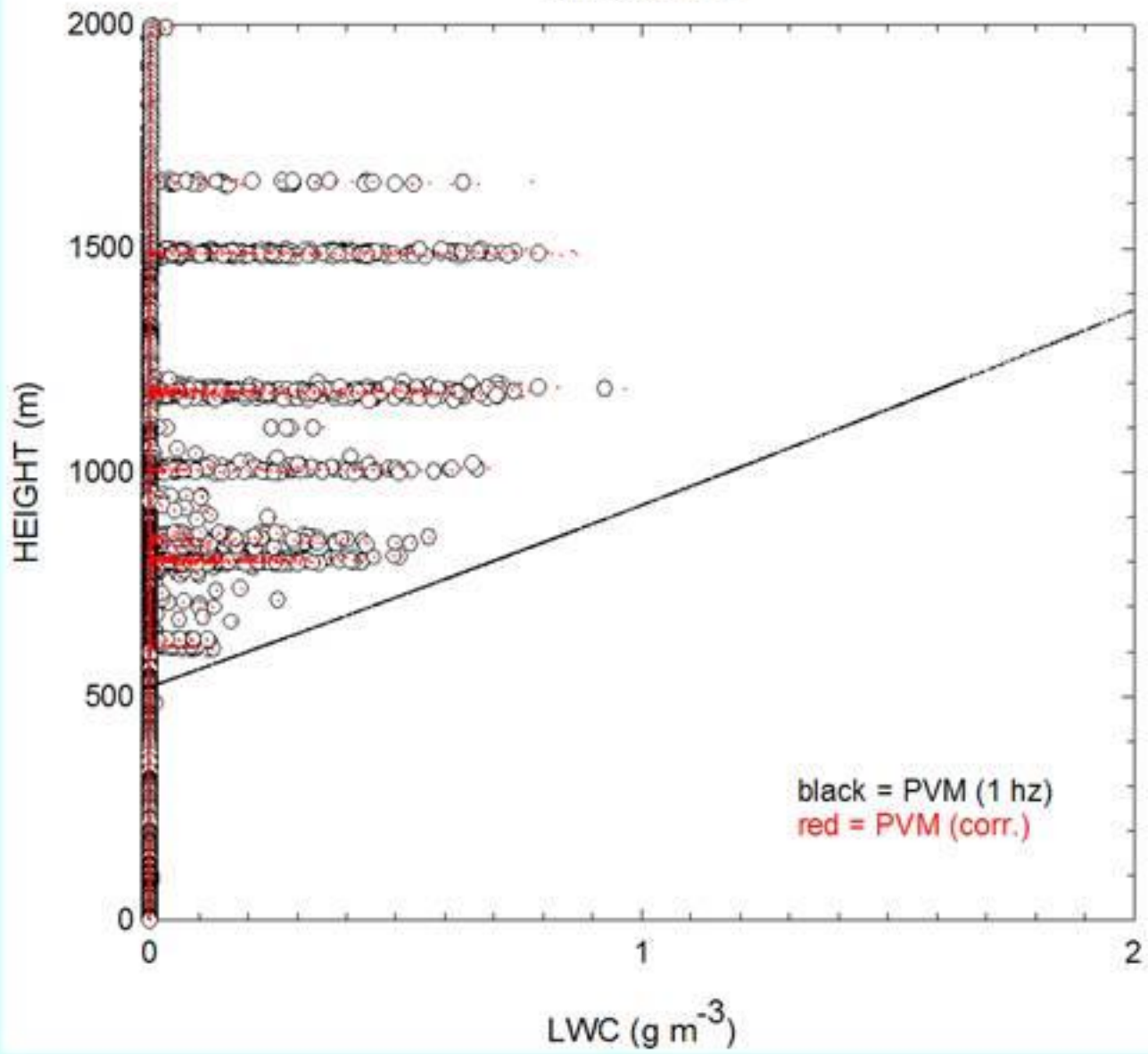


### KING PROBE COMPARISON

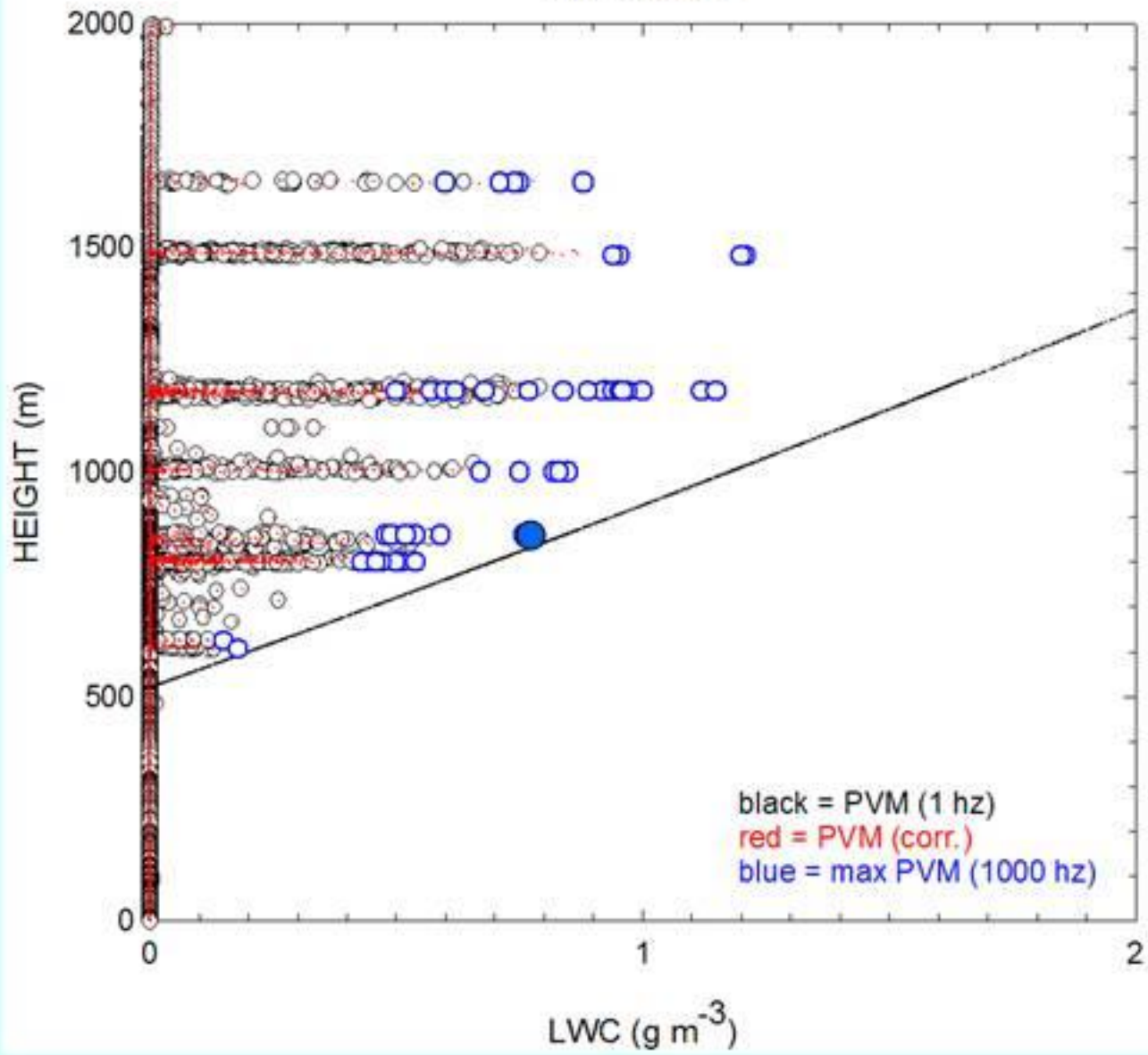




# RICO, r12

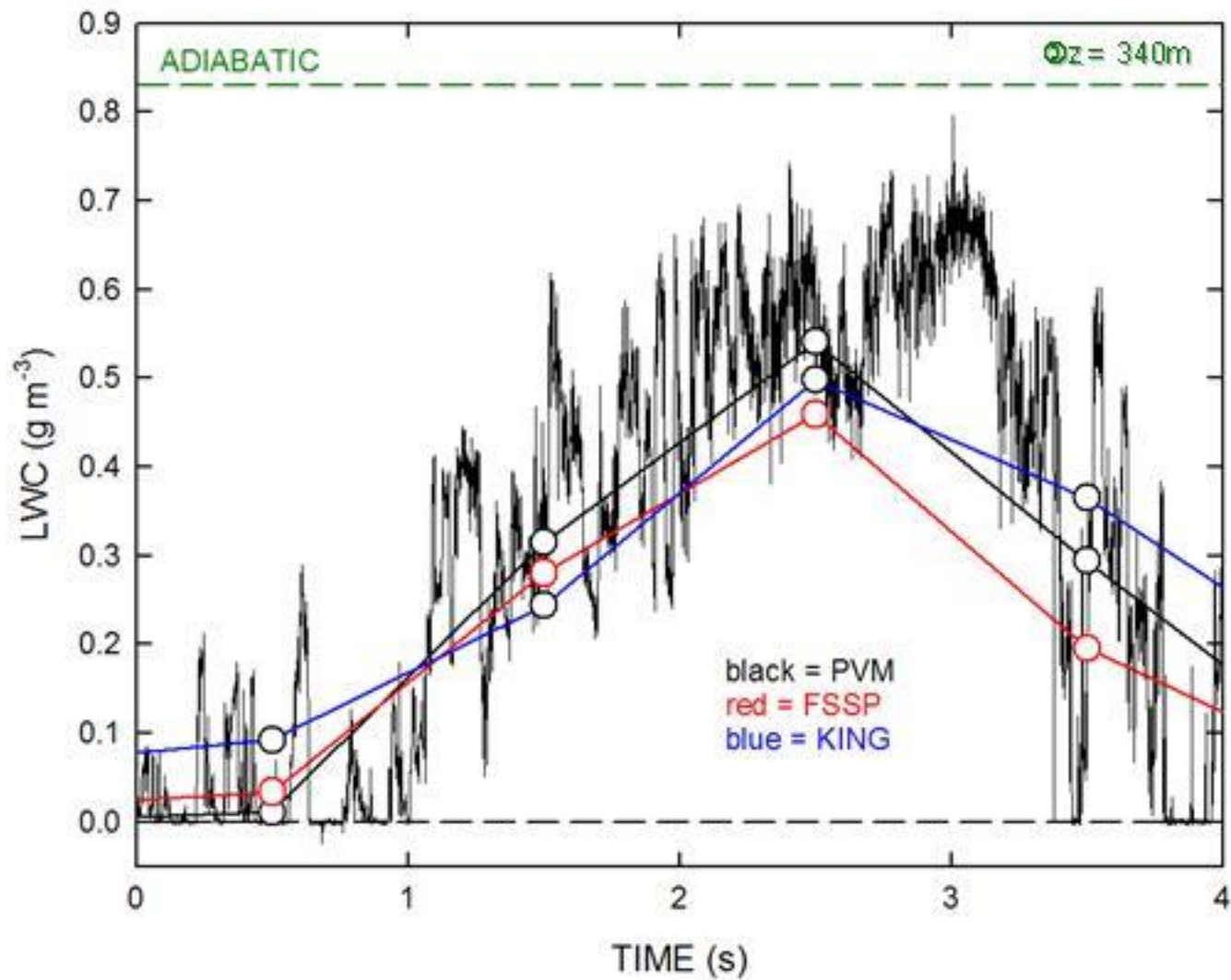


# RICO, r12



RICO - RF12

19:47:44 - 19:47:48



## PRELIMINARY FINDINGS

1. C-130 FSSP data questionable for RF01; read [FSSPrf01.pdf](#) in TWIKI link on JOSS RICO web page.
2. Best accuracy of 1-Hz LWC data is about  $\pm 10\%$  for Cu with small droplets.
3. Highest 1-Hz LWC correlation is between KING (PLWCC1) and PVM (FSSP-referenced).
4. 1-Hz LWC measured by larger droplet probes has roughly  $\pm 50\%$  variability.
5. Overlap of FSSP, 260X, 2DC, 2DP spectra is generally good, some exceptions:
  - a. RF01 – 2DC smaller than 260X for small drops
  - b. RF03 – 2DC occasionally smaller than 260X for small drops
  - c. RF07 – 260X measuring lower than 2DC many times
  - d. RF11 – 260X occasionally smaller than 2DC





## RESEARCH AND COLLABORATION

1. Analyze fast microphysical data for description and statistics of entrainment features.
2. Establish pdfs of adiabatic LWC in RICO Cu and compare to SCMS Cu.
3. Utilize C-130 video to estimate vertical cloud distances.
4. Collaborate with Steve Krueger and students on microphysics and EMPM application.