

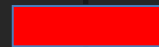
Boulder, Colorado

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- Radiosonde Comparisons
- Satellite & NOAA FPH Comparisons



Comparisons of Intermet and RS92 radiosondes



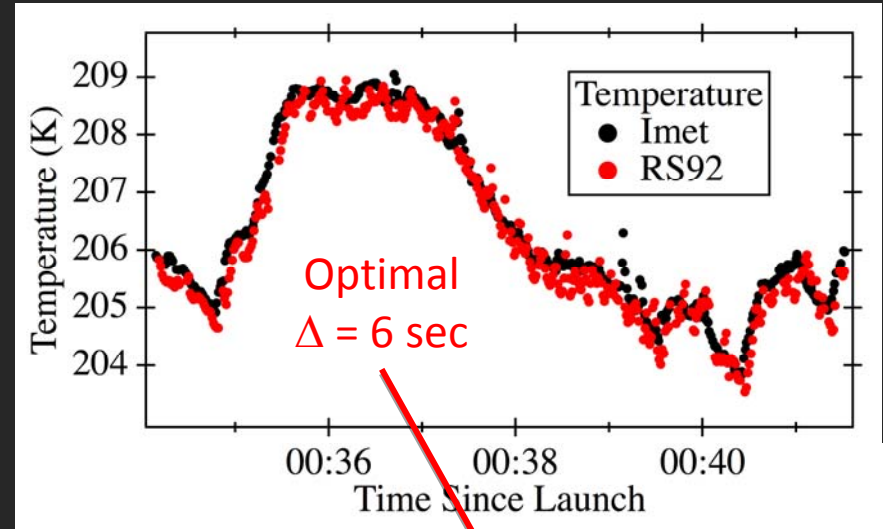
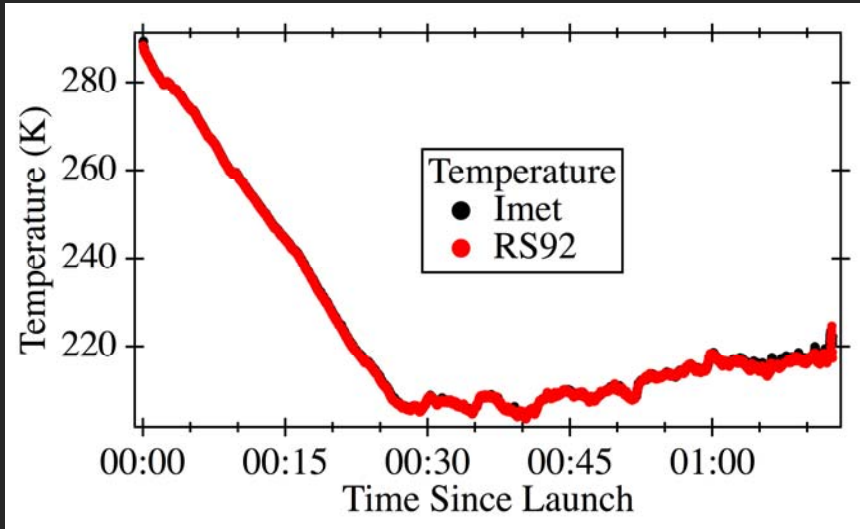
Imet + Ozonesonde (+ FPH)



RS92

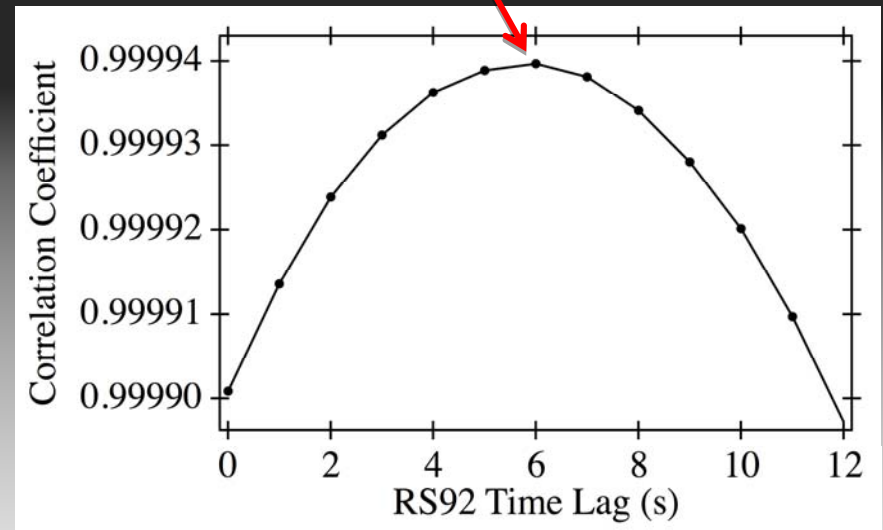


Synchronizing T=0



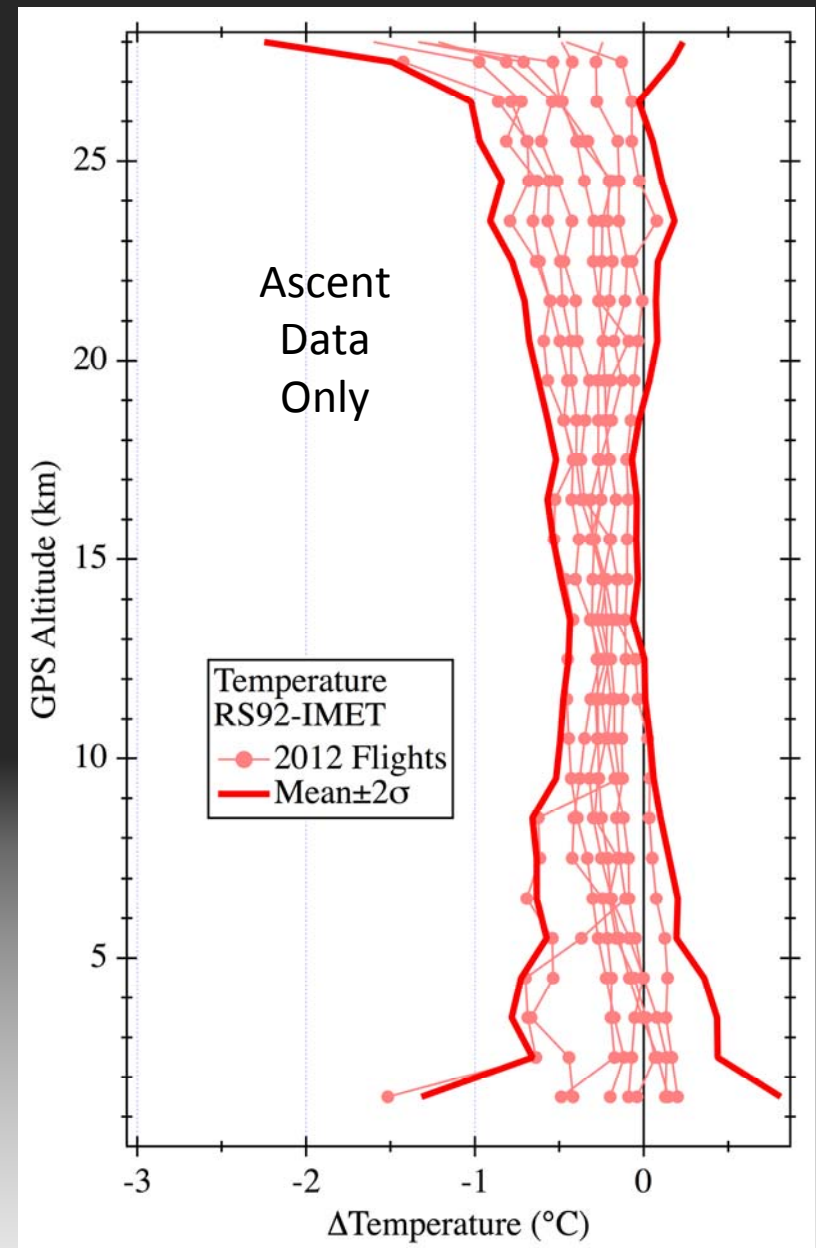
Calculate "r" for ascent temperatures while progressively lagging elapsed timestamps by 1 second

Find optimal time lag (best correlation)



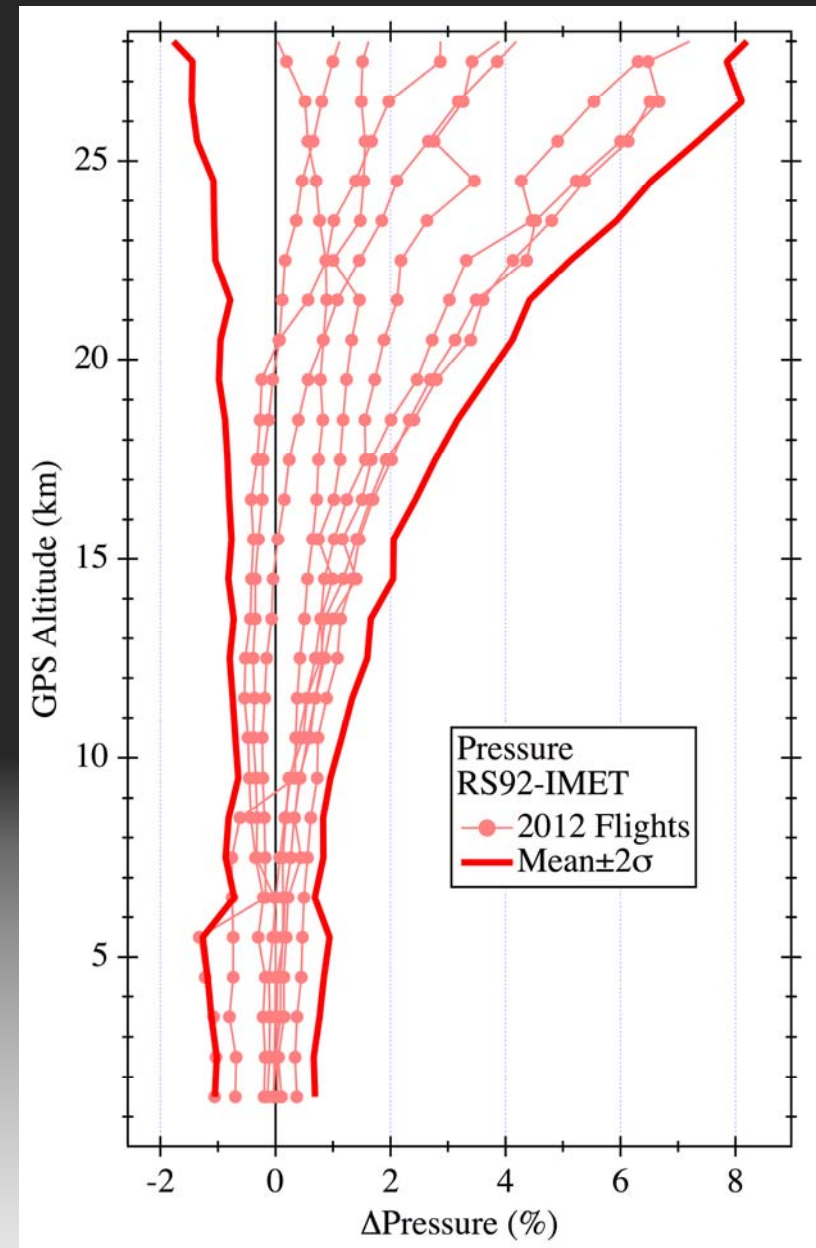
Comparisons of Intermet and RS92 radiosondes: Temperature

- Both temperatures are corrected for solar radiation effects
- Mean biases: 0 to 0.5°C
- Biases are statistically significant (2σ) at 12-18 km



Comparisons of Internet and RS92 radiosondes: Pressure

- Mean relative biases increase from:
0% in lower troposphere to
1% in upper troposphere to
3% in the middle stratosphere
- None of the mean biases are statistically significant (2σ)



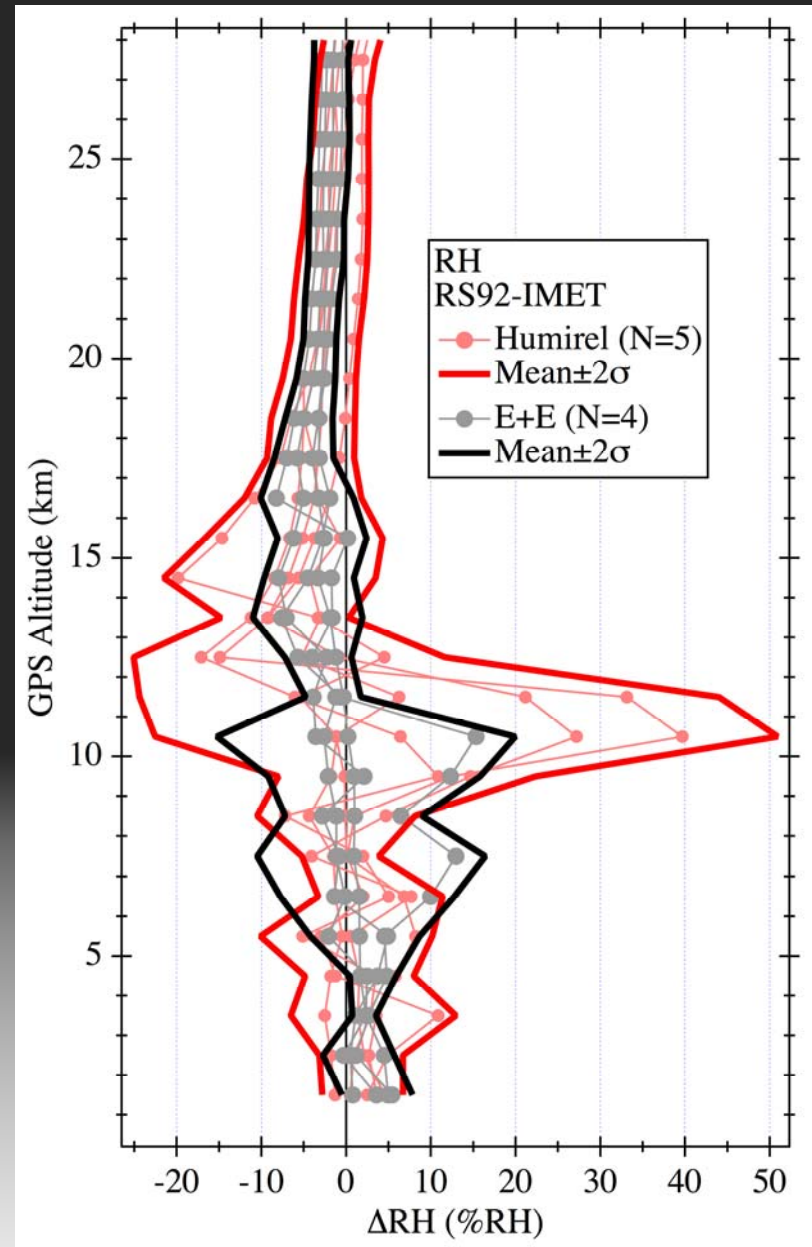
Comparisons of Internet and RS92 radiosondes: Relative Humidity

Only RS92 RH data are corrected

June 2012: Started launching
Internet radiosondes with the
E+E humidity sensor (thin film
capacitive)

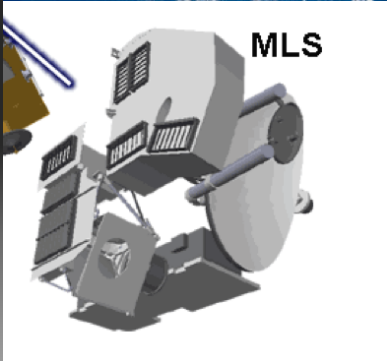
With Humirel sensors mean biases
in the UT were $>15\%RH$

With E+E sensors mean biases
in the UT are $<5\%RH$



Comparisons of Satellite Sensors and NOAA FPH

Halogen Occultation Experiment (HALOE)



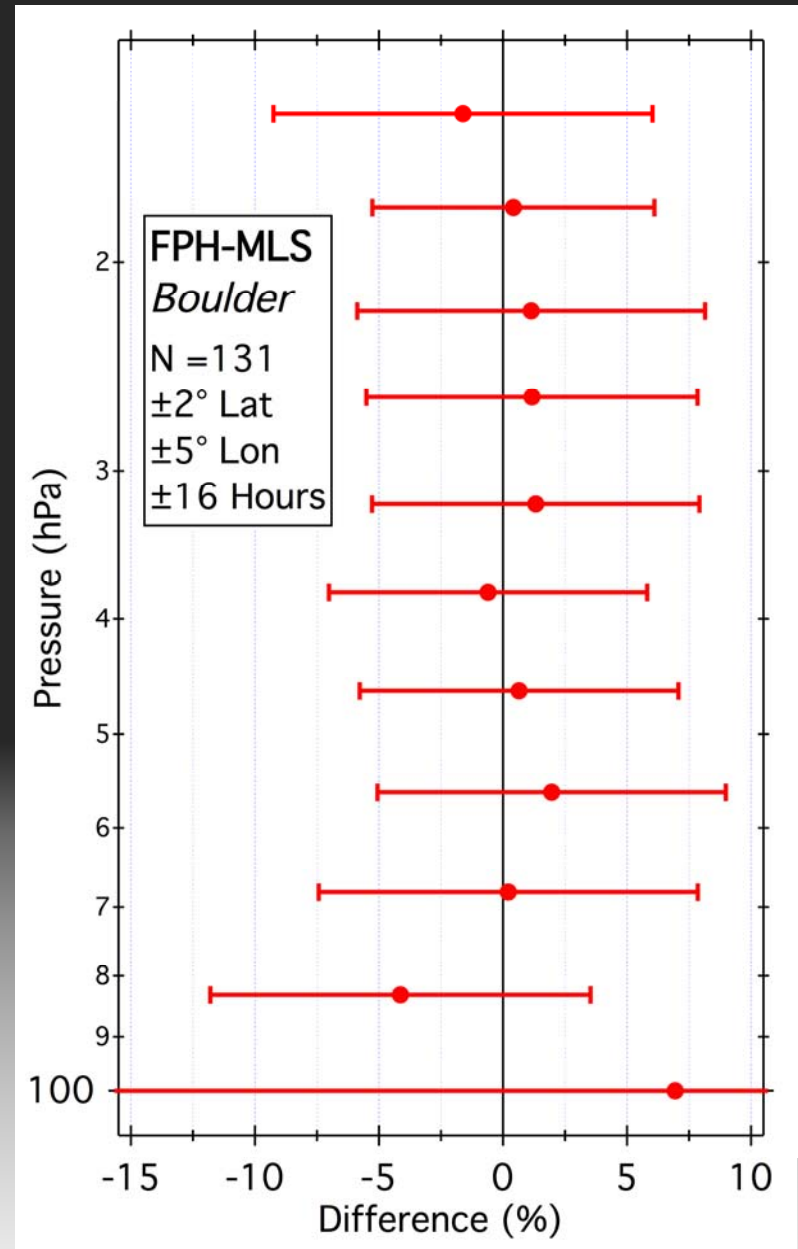
VS



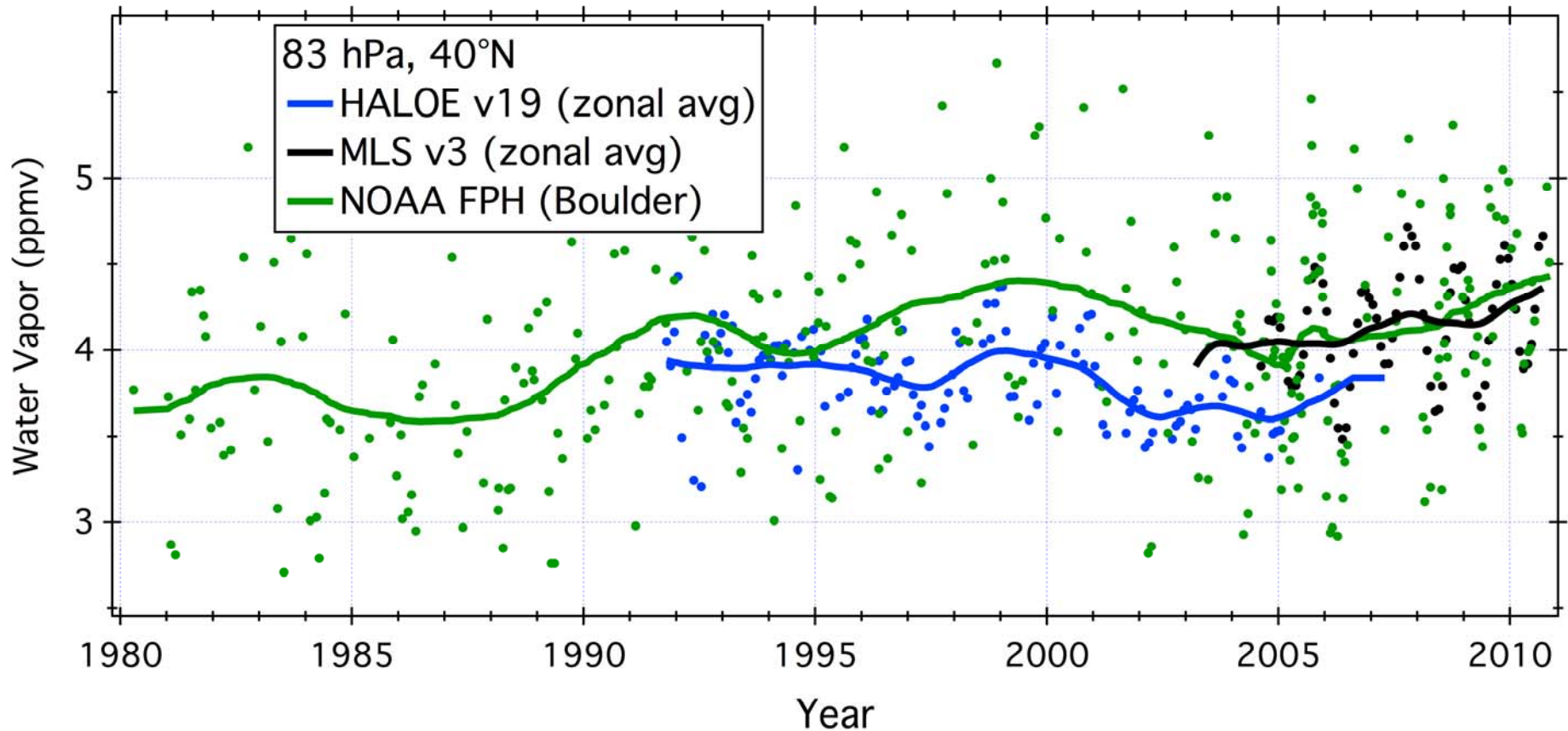
NOAA FPH

Microwave Limb Sounder (MLS)

- FPH and MLS agree to better than 3% above 83 hPa (N= 131)



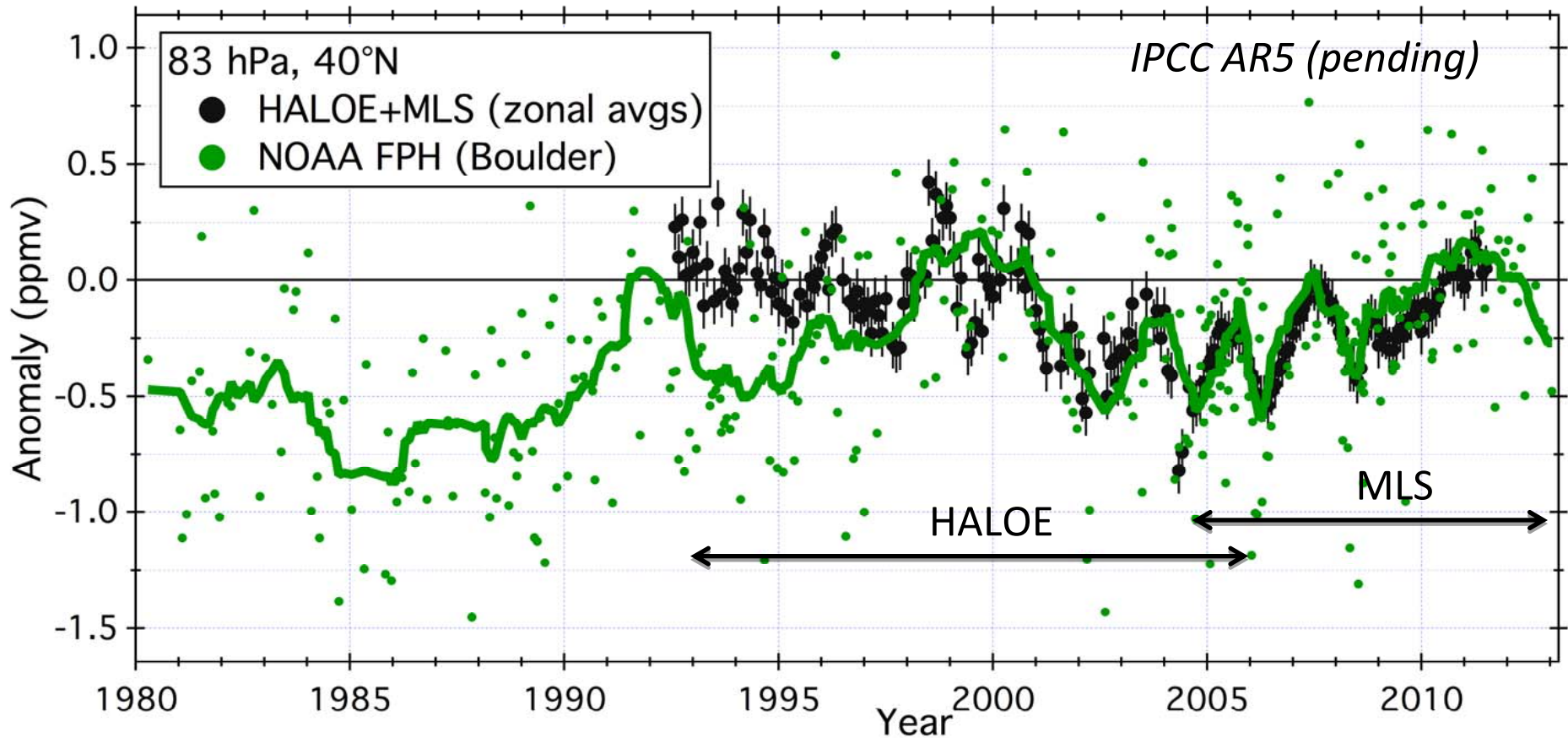
Comparison of FPH, HALOE and MLS Records



- HALOE and MLS data are monthly zonal averages
- Offset of 0.3 ppmv between HALOE and MLS during overlap period



Comparisons with HALOE and MLS Records



- Anomalies remove the offset between HALOE and MLS
- Very good coherence of anomalies 1998 - 2012
- Poor coherence of anomalies 1993 – 1997 (not understood)



Global Monitoring Annual Conference

NOAA Earth System Research Laboratory, Boulder

May 21-22, 2013

(abstracts due April 15)

<http://www.esrl.noaa.gov/gmd/annualconference/>

