

Measurement Descriptions

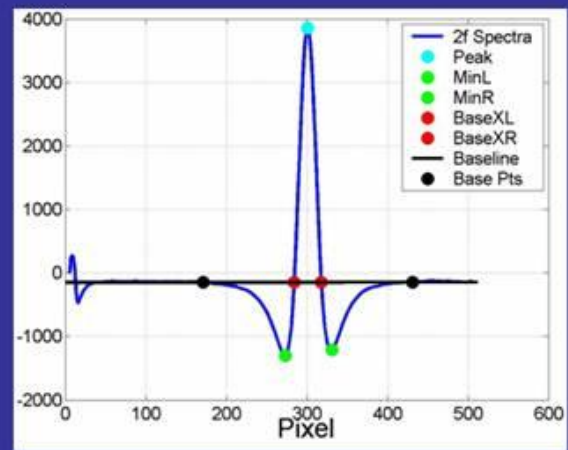
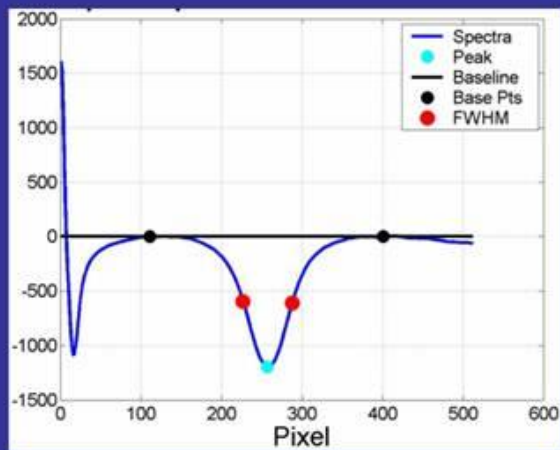
Instrument	Method	Precision (1-sec avg)	Accuracy	LOD
TEI Ozone	UV absorbance @ 354 nm	1 ppbv	±5 ppbv	1 ppbv
Fast-Response Ozone	NO ₂ Chemiluminescence	0.25 ppbv	±5 ppbv	0.25 ppbv
CO	VUV Resonance Fluorescence	3 ppbv	±3 ppbv + 1%	3 ppbv
TDL Water Vapor	TDL IR absorbance @ 1.368 μm	5 %	± 10 %	8 ppmv (nom)

CO Performance Issues

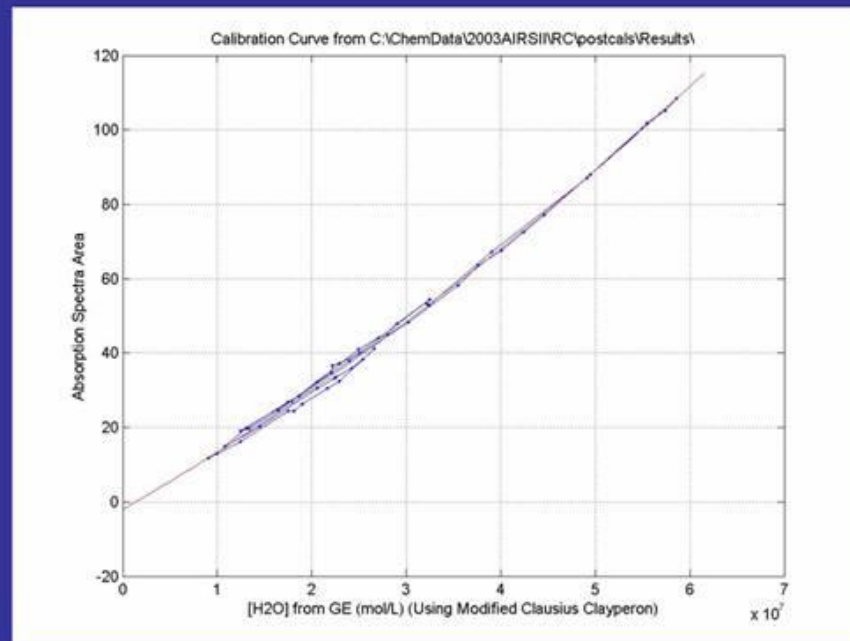
- RF06/07 problems:
 - Executable file corruption
 - Severe sensitivity loss
- January IOP problems:
 - Large leak at optical filter and lamp interface
 - Photomultiplier failure
- Improvements:
 - Re-engineer all o-ring or groove dimensions
 - Identify alternative detectors for improved field support
 - Redesign flow cell



Water Vapor Processing



Water Vapor Calibration



Water Vapor Calibration Facility

- Kahn/Michell DCS-80 mobile calibration system
- Precise generation and accurate analysis of water vapor stream
 - 1 to 20,000 ppmv range (-80 to +20 °C)
 - Traceable to NIST and NPL (UK)
 - ± 0.1 °C accuracy down to -60 °C
 - ± 0.2 °C accuracy below -60 °C
- Modified for pressure controlled operation



Data Status

Instrument	Data Coverage	File Format	Sample Rate	Availability
TEI Ozone	All flights	Netcdf (RAF files)	10-s	Current
Fast-Response Ozone	RF01, RF03-RF19, All ferries	ASCII	25 sps	8/1/2005
CO	RF01-RF06, RF09, Dec ferries	ASCII	≤18 sps	8/1/2005
TDL Water Vapor	RF01-RF09, RF11- RF19, All ferries	ASCII	≤ 18 sps	8/1/2005

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