Turbulence Measurements on CIRPAS Twin Otter during POST

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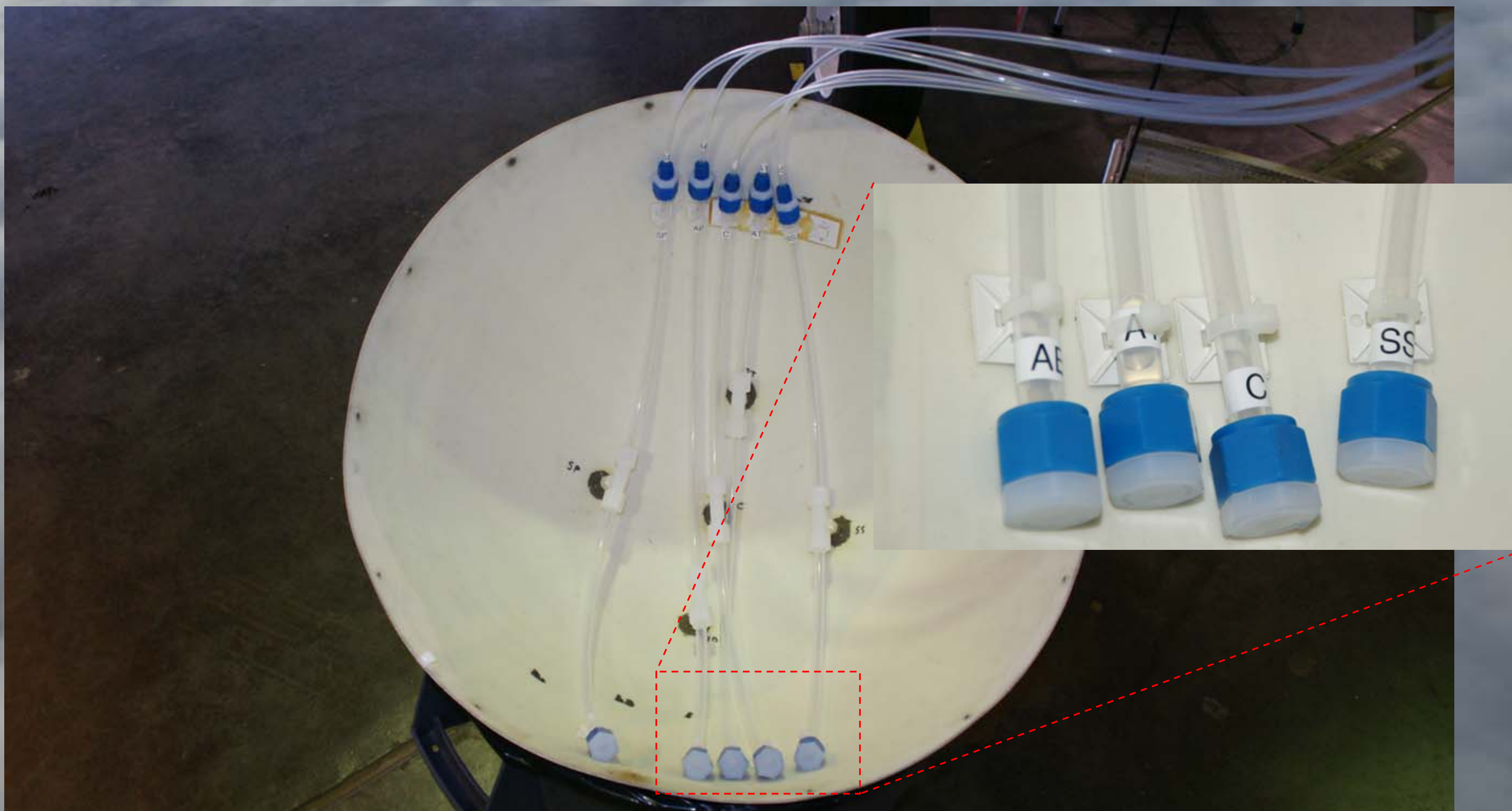
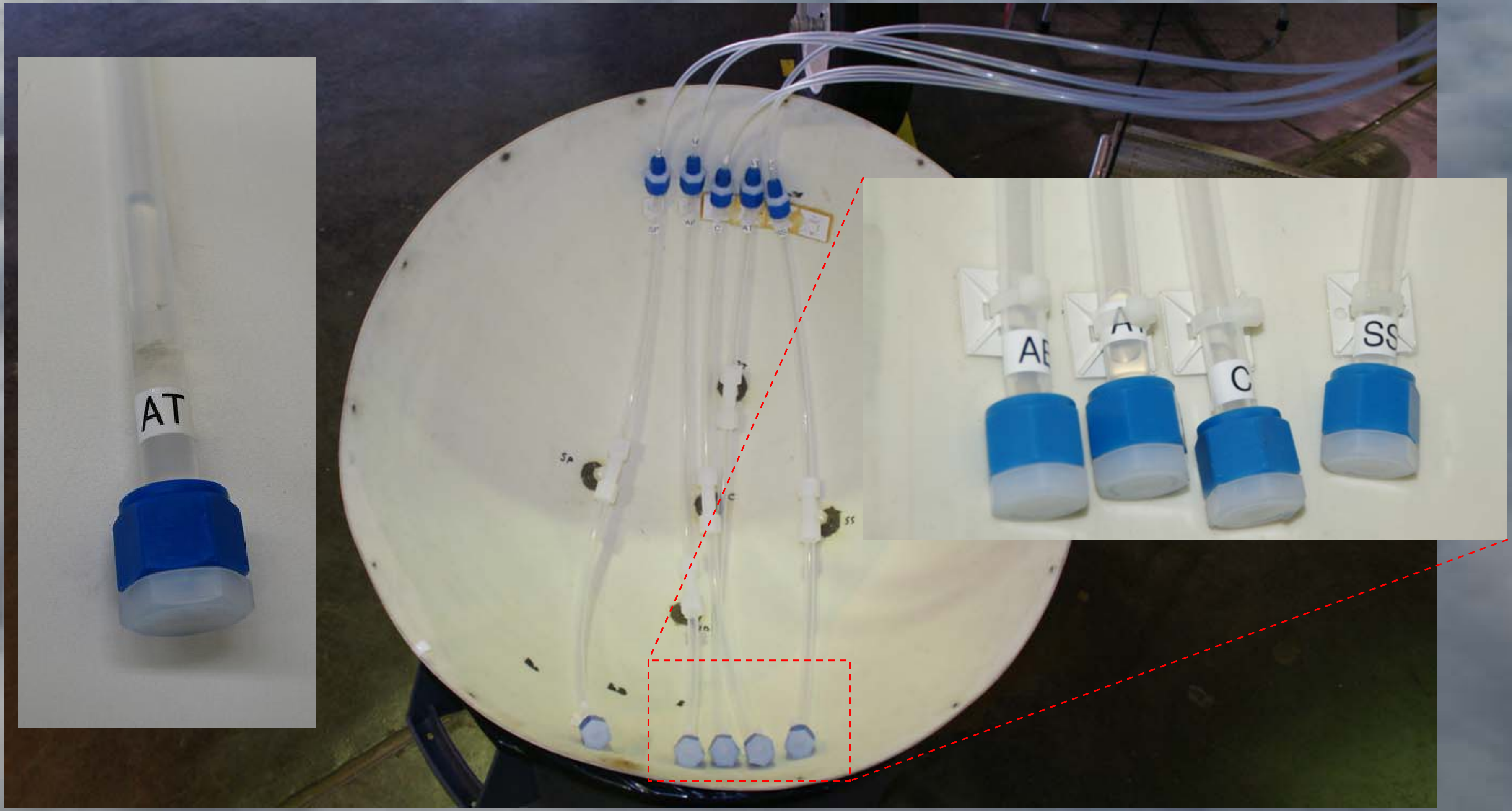
POST- UC Irvine
Turbulence Instrumentation

New radome plumbing, effectively traps clouds (or rain) liquid water preventing it from obstructing the pressure xducers lines. Zero failure in POST and VOCALS-REx.



New radome plumbing, effectively traps clouds (or rain) liquid water preventing it from obstructing the pressure xducers lines. Zero failure in POST and VOCALS-REx.



Parameter	Instrument[a]	Location	Fast/Slow[b]
Position	Systron Donner C-MIGITS III (GPS/INS) (**2**)[c]	Nose	F
	Trimble TansVector (GPS)	Wings & Fus., top	F
	NovAtel (GPS)	top Fus.	S
Ground Speed Vector	Systron Donner C-MIGITS III (GPS/INS) (**2**)[c]	Nose	F
	Trimble TansVector (GPS)	Wings & Fus., top	F
Attitude Angles	Systron Donner C-MIGITS III (**2**)[c] (GPS/INS)	Nose	F
	Trimble TansVector (GPS)	Wings & Fus., top	F
Aircraft Altitude	Collins ALT-50 Radar Altimeter	Belly	S
Humidity	LI-COR 7500	Nose	F
	Campbell Sci. Krypton Hygrometer KH2O	Nose	F
	NCAR Lyman-α Hygrometer	Nose	F
	EdgeTech Dewpointer 137-C3	Nose	S
Recovery Temperature	Rosemount 102E4AL (**2**)[c]	Nose	F
	UCI-modified Rosemount (**2**)[c]	Nose	F
	U Warsaw Ultra Fast Temperature (**2**)[c]	Nose	F
Airspeed Vector			
$\Delta P_\alpha, \Delta P_\beta$ {Differential Attack,Sideslip Pressure}	Flush Radome Pressure Ports Setra 239 Transducers	Radome	F
P_{qm} {Dynamic Pressures}	Aero Instrument Pitot Tube Setra 239 Transducer	Fuselage, Starboard	F
	Flush Radome Pressure Port Setra 239 Transducer	Radome	F
Static Pressure	Flush Pressure Ports Setra 270 Transducer	Fuselage	F
IR Sea Surface Temperature	Heiman KT19.85 Radiometer	Nose	S
IR Sky Temperature	Tasco THI-700L	Fuselage, top	S
SW $\uparrow$ Irradiance	Kipp & Zonen	Fuselage, belly	S
SW $\downarrow$ Irradiance	Kipp & Zonen	Fuselage, top	S
LW $\uparrow$ Irradiance	Kipp & Zonen	Fuselage, belly	S
LW $\downarrow$ Irradiance	Kipp & Zonen	Fuselage, top	S
CO2 Concentration	LI-COR 7500	Nose	F

[a] GPS: Global Positioning System, INS: Inertial Navigation System

[b] F: Fast-response sensor, S: Slow-response sensor

[c] Number of identical sensors

Status of Instruments Logged on UCI Data System

Physics Of Stratocumulus Top (POST) Jul-Aug 2008		UTC Day	7/16	7/17	7/19	7/21	7/28	7/29	7/30	8/1	8/2	8/4	8/6	8/8	8/9	8/12	8/13	8/14	8/15
Contact Scientist	Instrument	Flight ID	TO1	TO2	TO3	TO4	TO5	TO6	TO7	TO8	TO9	TO10	TO11	TO12	TO13	TO14	TO15	TO16	TO17
hjonsson@nps.edu	Rosemount Temperature																		
dkhelif@uci.edu	Rosemount Temperature (UCI)																		
dkhelif@uci.edu	Mod. Rosemount Temp (UCI)									** Removed to make space for other instruments									
dkhelif@uci.edu	LI-COR 7500 CO2 (UCI)		Not installed																
dkhelif@uci.edu	LI-COR 7500 Humidity (UCI)		Not installed					(xx)											
hjonsson@nps.edu	Edge-Tech Dewpoint																		
dkhelif@uci.edu	Lyman-Alpha (UCI)									** Removed to make space for other instruments									
dkhelif@uci.edu	Mod. Krypton Hygrometer (UCI)		Not installed		Not installed		Not installed		Not installed		Not installed								
hjonsson@nps.edu	Radar Altimeter																		
hjonsson@nps.edu	Static Pressure																		
dkhelif@uci.edu	Radome Gust System (UCI) (x)																		
hjonsson@nps.edu	Heiman SST																		
dkhelif@uci.edu	Upward-looking IR Temp. (UCI)																		
dkhelif@uci.edu	C-MIGITS (UCI)																		

Legend

UCI	UCI and CIRPAS	Operational	Some data	No data	(x) Different processing	(xx) Clipped at 3.6 g/m^3

Physics Of Stratocumulus Top (POST) Jul-Aug 2008		UTC Day	7/16	7/17	7/19	7/21	7/28	7/29	7/30	8/1	8/2	8/4	8/6	8/8	8/9	8/12	8/13	8/14	8/15
Contact Scientist	**Instrument**	**Flight ID**	TO1	TO2	TO3	TO4	TO5	TO6	TO7	TO8	TO9	TO10	TO11	TO12	TO13	TO14	TO15	TO16	TO17
malina@fuw.edu.pl	Ultra Fast Temperature (UW)		Operational	Operational	Operational	No data	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	No data	Operational
hjonsson@nps.edu	Rosemount Temperature		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
dkhelif@uci.edu	Rosemount Temperature (UCI)		Operational	Operational	Operational	No data	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
dkhelif@uci.edu	Mod. Rosemount Temp (UCI)		Operational	Operational	Operational	No data	** Removed to make space for other instruments												
dkhelif@uci.edu	LI-COR 7500 CO2 (UCI)		Not installed				Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
dkhelif@uci.edu	LI-COR 7500 Humidity (UCI)		Not installed				Operational	Operational (xx)	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	Edge-Tech Dewpoint		Operational	Operational	Operational	Operational	Operational	Operational	No data	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
beaton@ucar.edu	Lyman-Alpha (NCAR)		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
dkhelif@uci.edu	Lyman-Alpha (UCI)		Some data	No data	No data	No data	No data	No data	** Removed to make space for other instruments										
dkhelif@uci.edu	Mod. Krypton Hygrometer (UCI)		Not installed		Not installed		Not installed		Not installed		Not installed			Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	Radar Altimeter		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	Static Pressure		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
dkhelif@uci.edu	Radome Gust System (UCI) (x)		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	Heiman SST		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
dkhelif@uci.edu	Upward-looking IR Temp. (UCI)		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
bucholtz@nrlmry.navy.mil	Solar Radiometers		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
bucholtz@nrlmry.navy.mil	IR Radiometers		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	Novatel		Operational	Operational	Operational	Some data	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	TRANSVECTOR		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
dkhelif@uci.edu	C-MIGITS (UCI)		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	C-MIGITS (CIRPAS)		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	PCASP		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	FSSP-100		No data	Operational	Operational	Some data	No data	No data	Operational	Operational	Operational	Operational	No data	No data	No data	No data	Some data	Some data	Some data
hjonsson@nps.edu	CASP/CIP-2D/LWC		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
dionelee@gmail.com	PDI		Some data	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	TSI 3020 CPC		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hjonsson@nps.edu	TSI 3025 UFCPC		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hgerber6@comcast.net	PVM		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
hudon@dri.edu	CCN 1 (DRI) "this is a backup"		No data	** Removed to make space for other instruments (this is a backup instrument)															
hudon@dri.edu	CCN 2 (DRI)		No data	**	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Some data	Operational	Operational	Operational	Operational	Operational
rkwoods@cirpas.org	DMT-CCN (CIRPAS)		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
jesus_galvan@csumb.edu	Video/pics		Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
rkwoods@cirpas.org	Satcom		Operational	Some data	Some data	No data	Operational	Operational	Some data	Some data	Operational	No data	No data	No data	No data	No data	No data	No data	No data

Legend

UCI | UCI and CIRPAS | CIRPAS | Operational | Some data | No data | (x) Different processing | (xx) Clipped at 3.6 g/m^3

EOL/POST FIELD CATALOG - Report - Windows Internet Explorer

http://catalog.eol.ucar.edu/cgi-bin/post/report/index

POST Field Catalog

Physics of Stratocumulus Top Experiment

Catalog Home | Daily Reports | Operational Products | Model/Forecast Products | Research Products | Missions | Tools & Links

Date(UTC)	Twin Otter Flight Path Summary	Twin Otter flight notes	Twin Otter flight summary	Twin Otter instrument status	ops plan of the day
2008/09/04				15:00	
Date(UTC)	Twin Otter Flight Path Summary	Twin Otter flight notes	Twin Otter flight summary	Twin Otter instrument status	ops plan of the day
2008/08/19	11:44				
2008/08/15	16:00	16:14	16:27	00:00	17:30 17:39
2008/08/14	17:00		17:28		
2008/08/13	01:00		01:00		16:12
2008/08/12	00:00	00:46	00:57		15:39
2008/08/09	01:00	00:52	00:58		20:15
2008/08/08	00:00		00:55		15:40
2008/08/06	00:00	00:46	00:57		00:58
2008/08/05					20:29
2008/08/04	17:00	17:15	17:12		
2008/08/02	16:00		16:55	18:00	20:01
2008/08/01	17:00	17:10	17:10		21:01
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2008/07/28	01:00	01:00	01:00		20:15
2008/07/25					00:02 16:47
2008/07/24					23:51 23:53
2008/07/21	17:00		17:26		21:15
2008/07/19	01:00	00:49	01:05		03:45
2008/07/17	17:00	17:21 17:26	17:26		21:45
2008/07/16	17:00	17:12	17:15		16:04

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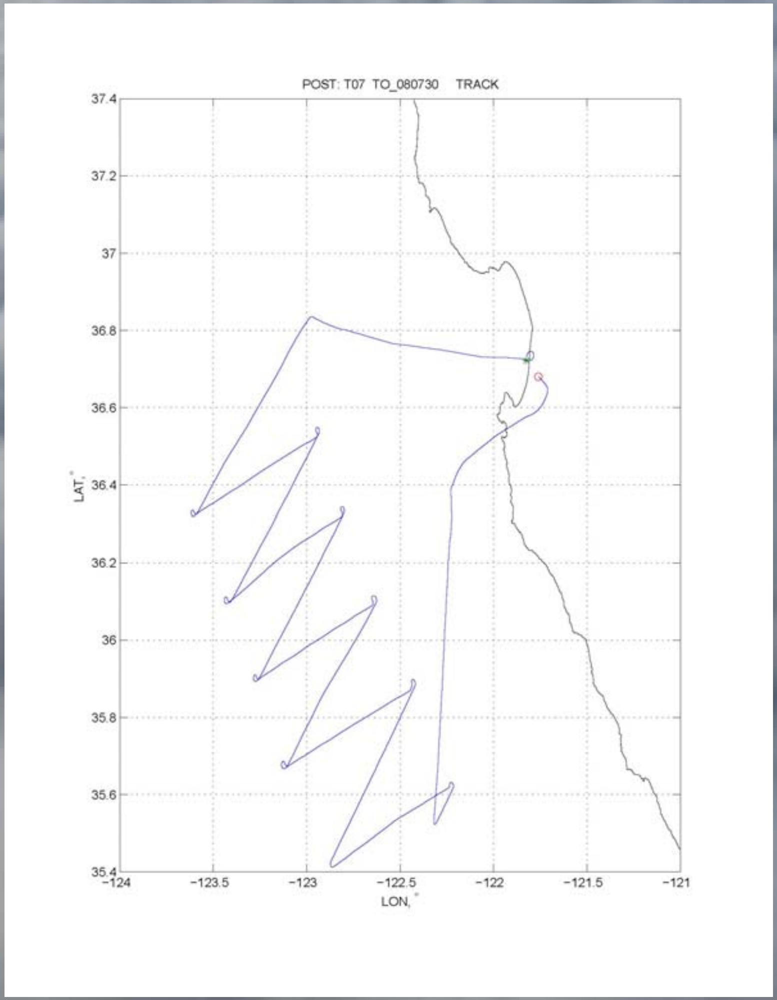
comments : gstoss at ucar.edu

FLIGHT PATH



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LON, °
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37.2
37
36.8
36.6
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36
35.8
35.6
35.4
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−123
−122.5
−122
−121.5
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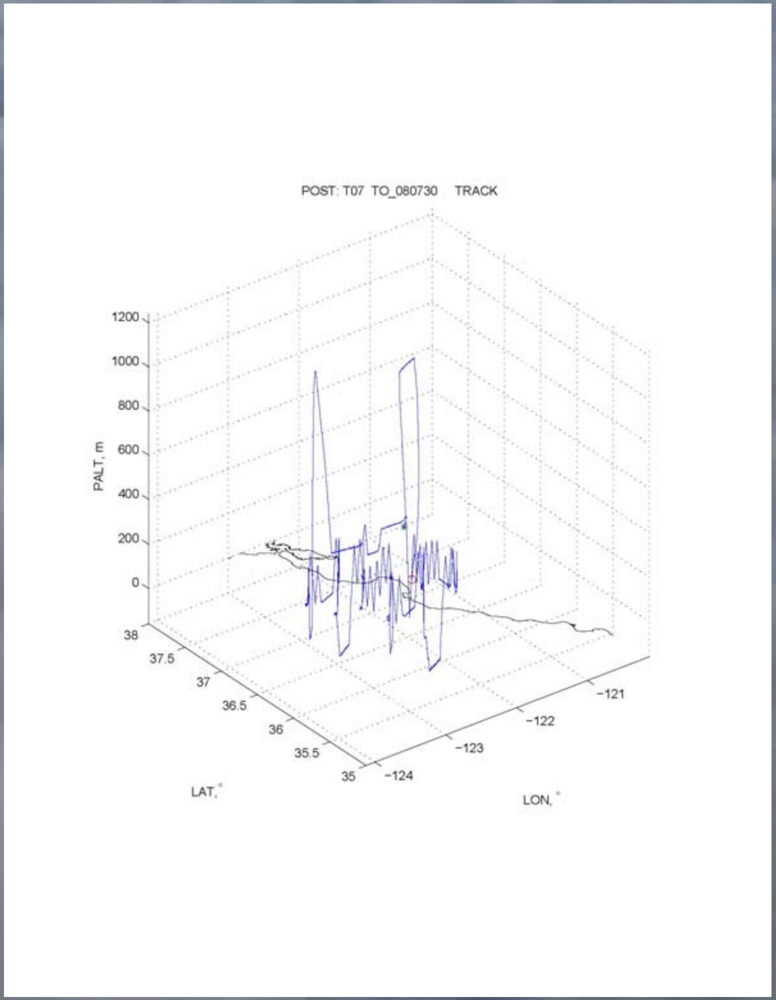

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LAT, °
LON, °
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1000
800
600
400
200
0
38
37.5
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36.5
36
35.5
35
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−123
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−121

EOL/POST FIELD CATALOG - Research: - Windows Internet Explorer

http://catalog.eol.ucar.edu/cgi-bin/post/research/prod_browse?platform=Twin_Otter&prod=uciplots&howmany=All&start=Start+Date&end=End+Date&submit=Get+Data

Catalog Home | Daily Reports | Operational Products | Model/Forecast Products | Research Products | Missions | Tools & Links

Twin_Otter(uciplots)

	Hours(UTC)				
Date	00	01	16	17	Movies
2008/07/16				1700	
2008/07/17				1700	
2008/07/19		0100			
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2008/08/09		0100			
2008/08/12	0000				
2008/08/13		0100			
2008/08/14				1700	
2008/08/15			1600		

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EOL/POST FIELD CATALOG - Research: - Windows Internet Explorer

http://catalog.eol.ucar.edu/cgi-bin/post/research/prod_browse?platform=Twin_Otter&prod=Description_uciplots&howmany=All&start=Start+Date&end=End+Date&submit=Get+Data

Catalog Home | Daily Reports | Operational Products | Model/Forecast Products | Research Products | Missions | Tools & Links

Twin_Otter(Description_uciplots)

	Hours(UTC)				
Date	00	01	16	17	Movies
2008/07/17				1715	
2008/07/19		0100			
2008/07/21				1700	
2008/07/28		0100			
2008/07/29		0100			
2008/07/30				1700	
2008/08/01				1700	
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2008/08/09		0100			
2008/08/12	0000				
2008/08/13		0100			
2008/08/14				1700	
2008/08/15			1600		

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Description of Plots from UCI Data System on CIRPAS Twin Otter
Physics Of Stratocumulus Top (POST) Jul 16 - Aug 15, 2008.

Page 1: Twin Otter 2-D Track with map overlay
LON: C-MIGITS Aircraft Longitude [deg]
LAT: C-MIGITS Aircraft Latitude [deg]

Page 2: Twin Otter 3-D Track with map overlay
LON: UCI C-MIGITS Aircraft Longitude [deg]
LAT: UCI C-MIGITS Aircraft Latitude [deg]
PALT: Pressure Altitude (adjusted to radar altitude) [m]

Page 3: Continuity Check of 40-Hz GPS Time from UCI DAQ system
Top panel:
Samples: 40-Hz sample number
40-Hz GPS Time, [s]
Bottom panel:
Samples: 40-Hz sample number
Delta (Time): Differential of 40-Hz GPS Time (Time(i+1)-Time(i)) [s]

Note: Pages 4-12 are Time series of grouped variables versus UTC [HH:MM]

Page 4: Twin Otter Attitude from UCI C-MIGITS
LAT: Aircraft Latitude [deg]
LON: Aircraft Longitude [deg]
THETA: Aircraft Pitch [deg]
PHI: Aircraft Roll [deg]
PSI: Aircraft True Heading [deg]

Page 5: Twin Otter Velocities from UCI C-MIGITS. (Earth Reference Frame)
Vx: Aircraft East Velocity [m/s]
Vy: Aircraft North Velocity [m/s]
Vz: Aircraft Vertical Velocity [m/s]

Page 6-8: Pressures from Radome and Fuselage
PDAR: Differential Pressure of angle of Attack from Radome [mb]
PDSR: Differential Pressure of angle of Sideslip from Radome [mb]
PQR: Dynamic Pressure from Radome [mb]
PQF: Dynamic Pressure from Fuselage (UCI Pitot) [mb]
PTR: Total Pressure from Radome [mb]
PSF: Static Pressure from Fuselage [mb]

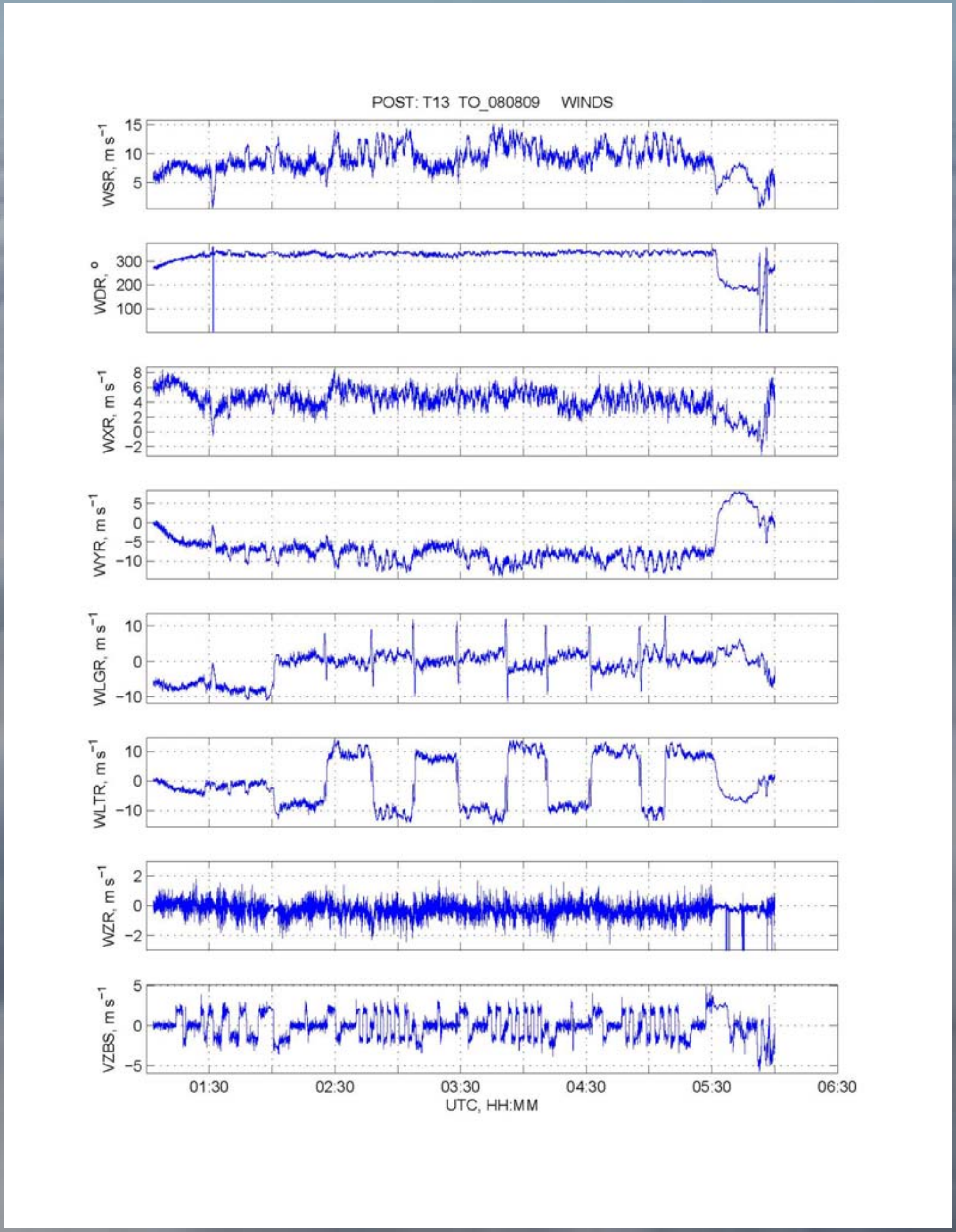
Page 9: Temperature Measurements
TTR: CIRPAS Rosemount Recovery Temperature [C]
TTR2: UCI Rosemount Recovery Temperature [C]
TAD: Ambient Temperature from reference temperature (ttr or ttr2) [C]
TIRKTD: Heiman KT Sea-surface IR Temperature [C]

Page 10: Humidity and CO2 Measurements
DPET: EdgeTech chilled mirror dew point temperature [C]
AHK: Campbell Sci. Krypton absolute humidity [V]
AHL: LI-COR 7500 absolute humidity (before in situ calibration) [g/m^3]
CO2L: LI-COR 7500 CO2 density [g/m^3]
PALTC: Pressure Altidude (adjusted to radar altitude) [m]

Page 11: Temperature and TAS Measurements
TAD: Ambient Temperature from reference temperature [C]
DPET: EdgeTech chilled mirror dew point temperature [C]
THETA: Potential Temperature [C (not customary K)]
TIRKTD: Heiman KT Sea-surface IR Temperature [C]
TASD: True Airspeed using dry air properties [m/s]

Page 12: Wind Measurements
WSR: Wind Speed [m/s]
WDR: Direction the wind is blowing from (meteorological convention) [deg]
WXR: East Wind Component - Earth Ref. [m/s]
WYR: North Wind Component - Earth Ref. [m/s]
WZR: Vertical Wind Component - Earth Ref. [m/s]
WLRG: Longitudinal Wind Component - Aircraft Ref. [m/s]
WLTR: Lateral Wind Component - Aircraft Ref. [m/s]
VZBS: Aircraft Vertical Velocity - Earth Ref. [m/s]

Page 12: WINDS



WINDS

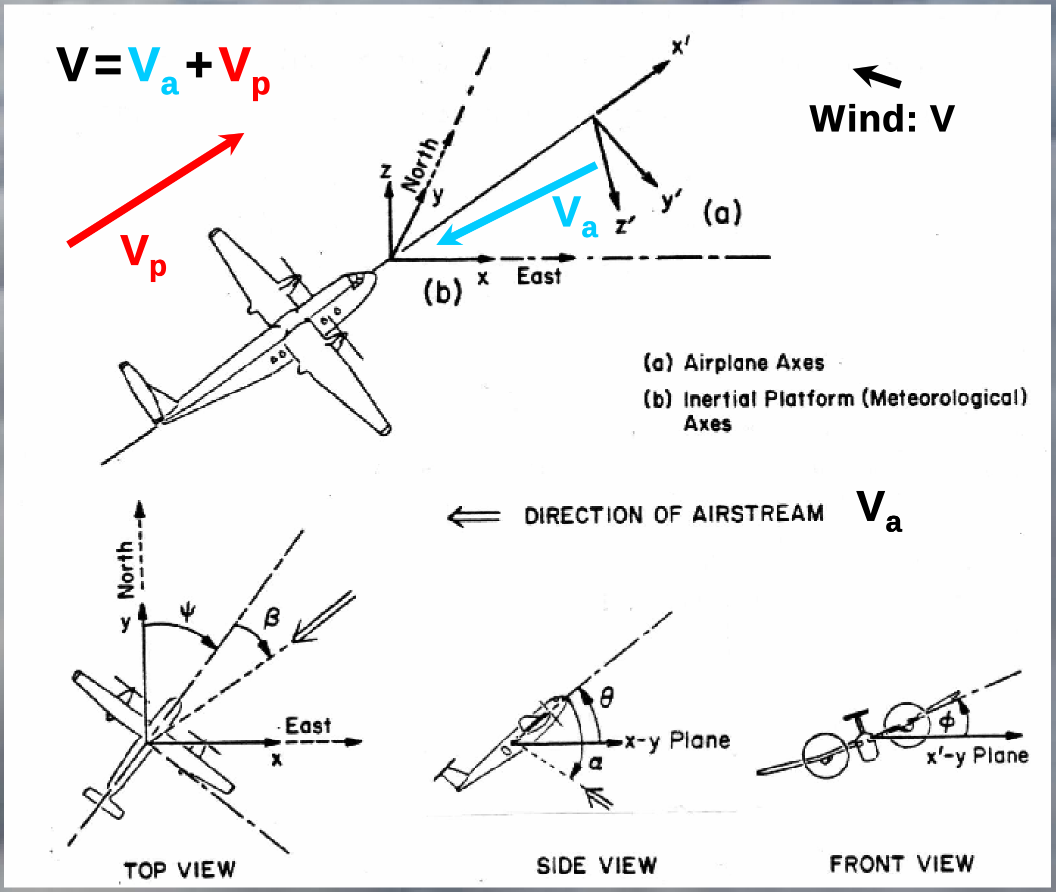


Figure from D.H. Lenschow and P. Spyers-Duran, NCAR/RAF Bulletin 23

$$
\begin{aligned}
u = {} & u_p - U_a D \\
& \times [\sin\psi \cos\theta + \tan\beta(\cos\psi \cos\phi + \sin\psi \sin\theta \sin\phi) \\
& \quad + \tan\alpha(\sin\psi \sin\theta \cos\phi - \cos\psi \sin\phi)] \\
& - L(\dot\theta \sin\theta \sin\psi - \dot\psi \cos\psi \cos\theta)
\end{aligned}
$$

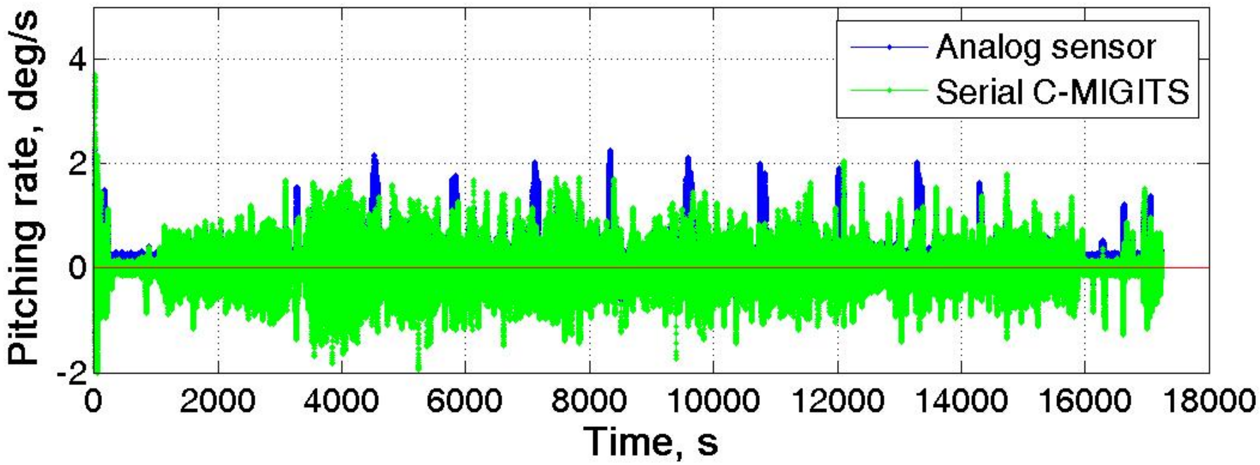
$$
\begin{aligned}
v = {} & v_p - U_a D \\
& \times [\cos\psi \cos\theta - \tan\beta(\sin\psi \cos\phi - \cos\psi \sin\theta \sin\phi) \\
& \quad + \tan\alpha(\cos\psi \sin\theta \cos\phi + \sin\psi \sin\phi)] \\
& - L(\dot\psi \sin\psi \cos\theta + \dot\theta \cos\psi \sin\theta),
\end{aligned}
$$

$$
\begin{aligned}
w = {} & w_p - U_a D[\sin\theta - \tan\beta \cos\theta \sin\phi - \tan\alpha \cos\theta \cos\phi] \\
& + L\dot\theta \cos\theta
\end{aligned}
$$

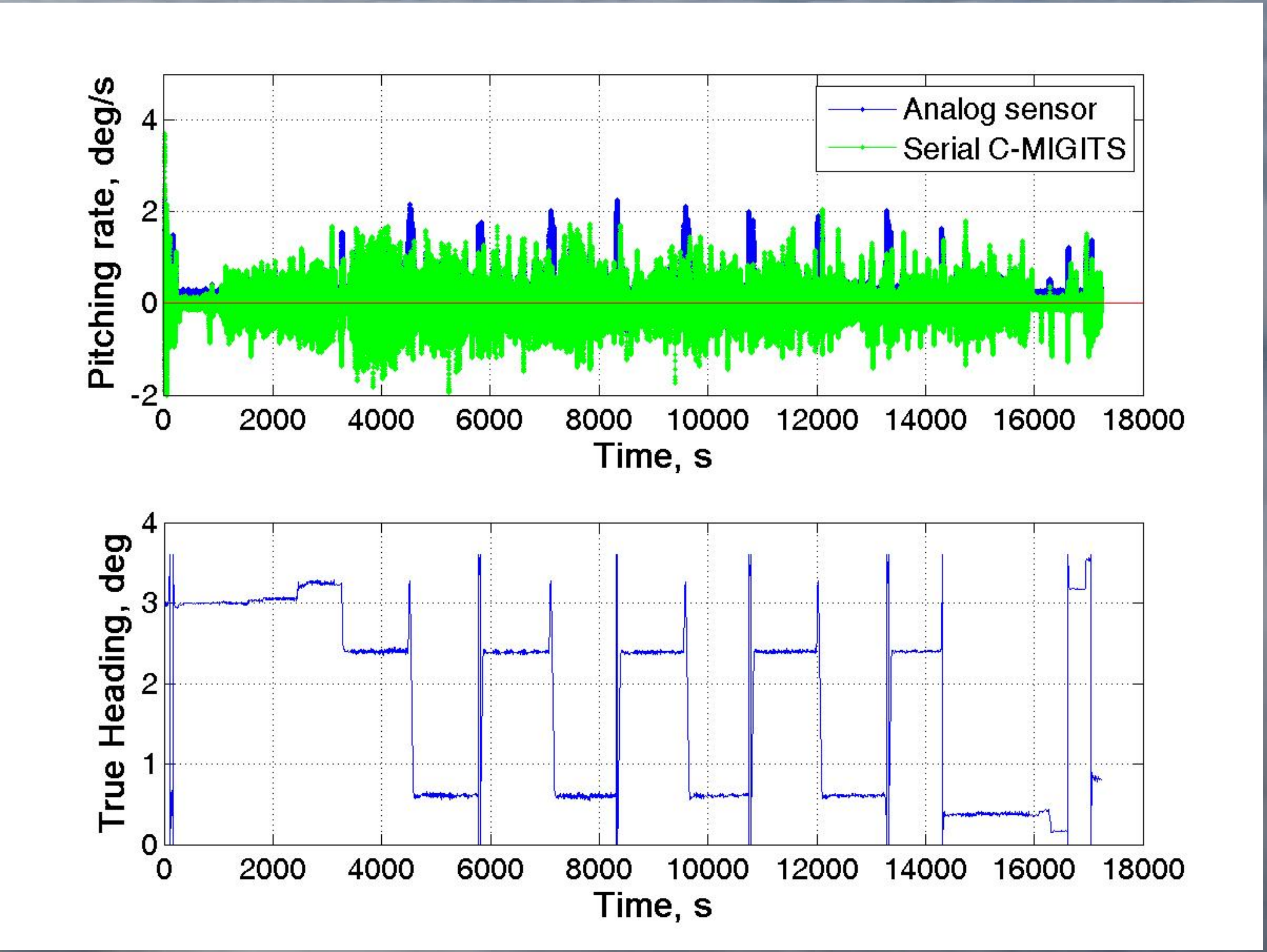
where u_p and v_p are the east and north aircraft velocity components, respectively; U_a is the true airspeed; α, β, θ, ϕ, and ψ are the aircraft attack, sideslip, pitch, roll, and true heading angles, respectively; L is the distance separating the INS and gust probe along the aircraft's center line; $D = (1 + \tan^2\alpha + \tan^2\beta)^{-1/2}$; and $\dot\psi = d\psi/dt$ and $\dot\theta = d\theta/dt$; w_p is the aircraft vertical velocity.

Serial data from INS/GPS C-MIGITS III unit.
Analog data (5-port radome gust system, P_s and T_r)

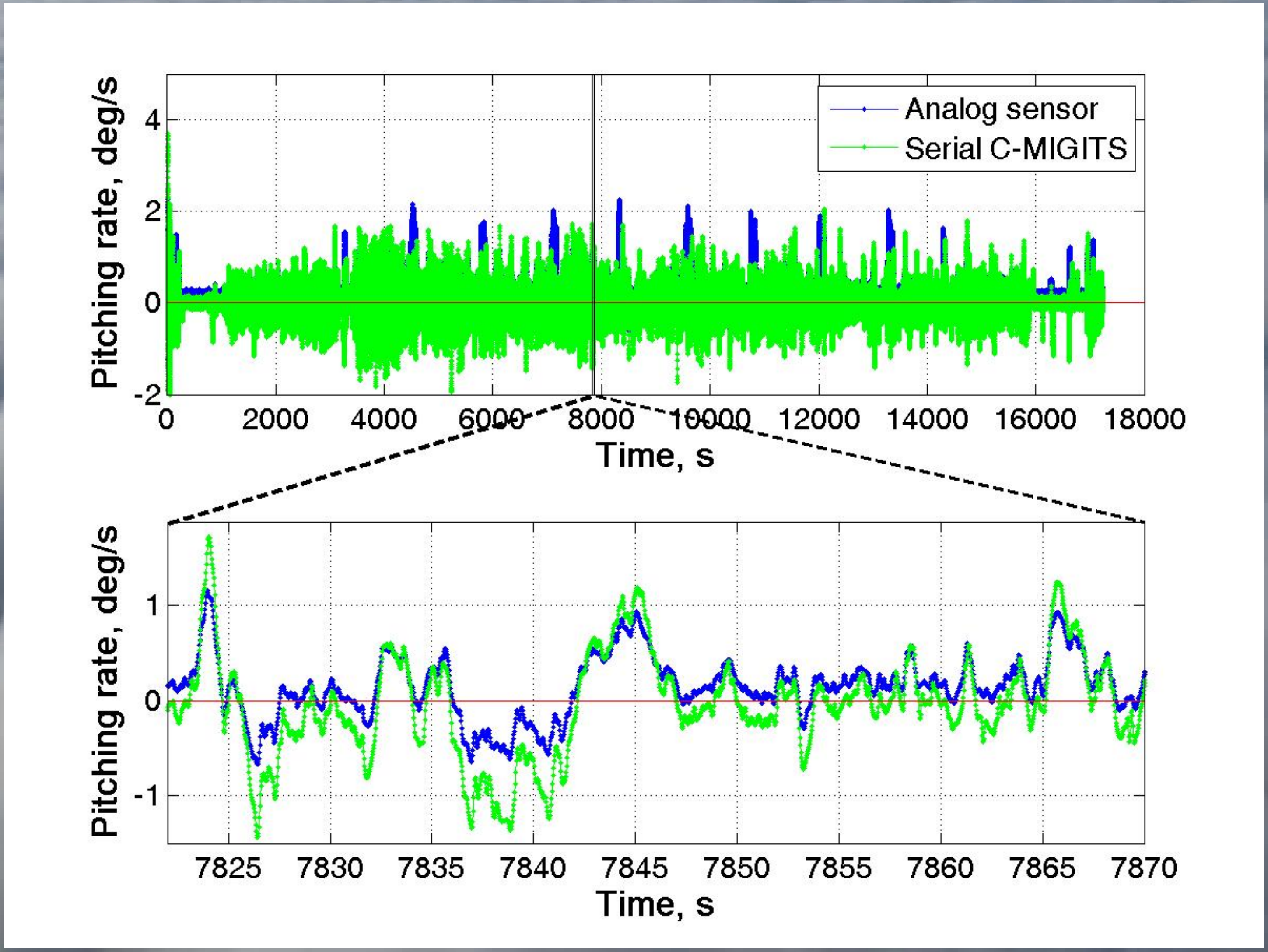
Analog-Serial Synchronization



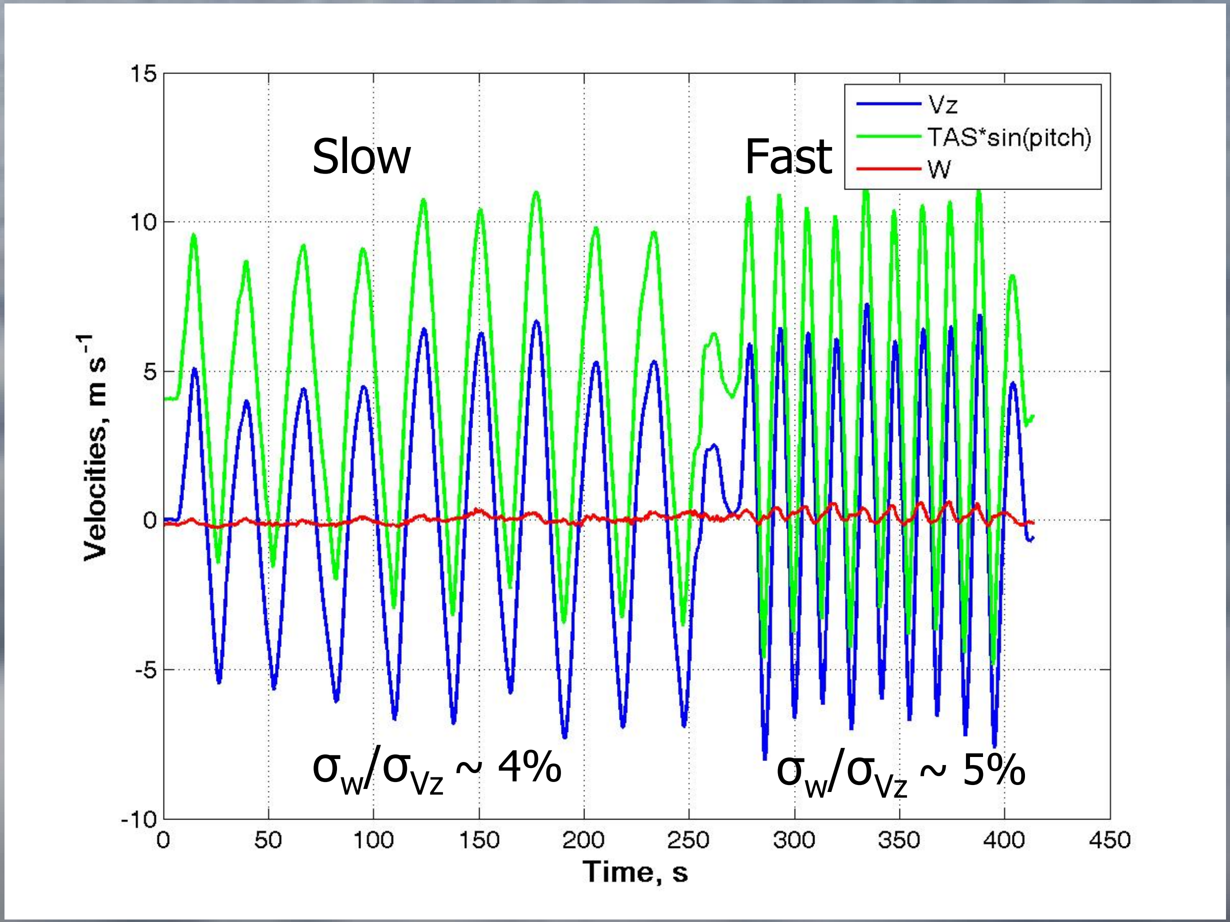
Analog-Serial Synchronization



Analog-Serial Synchronization

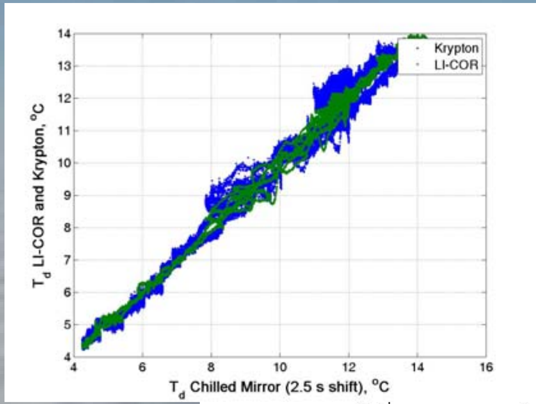


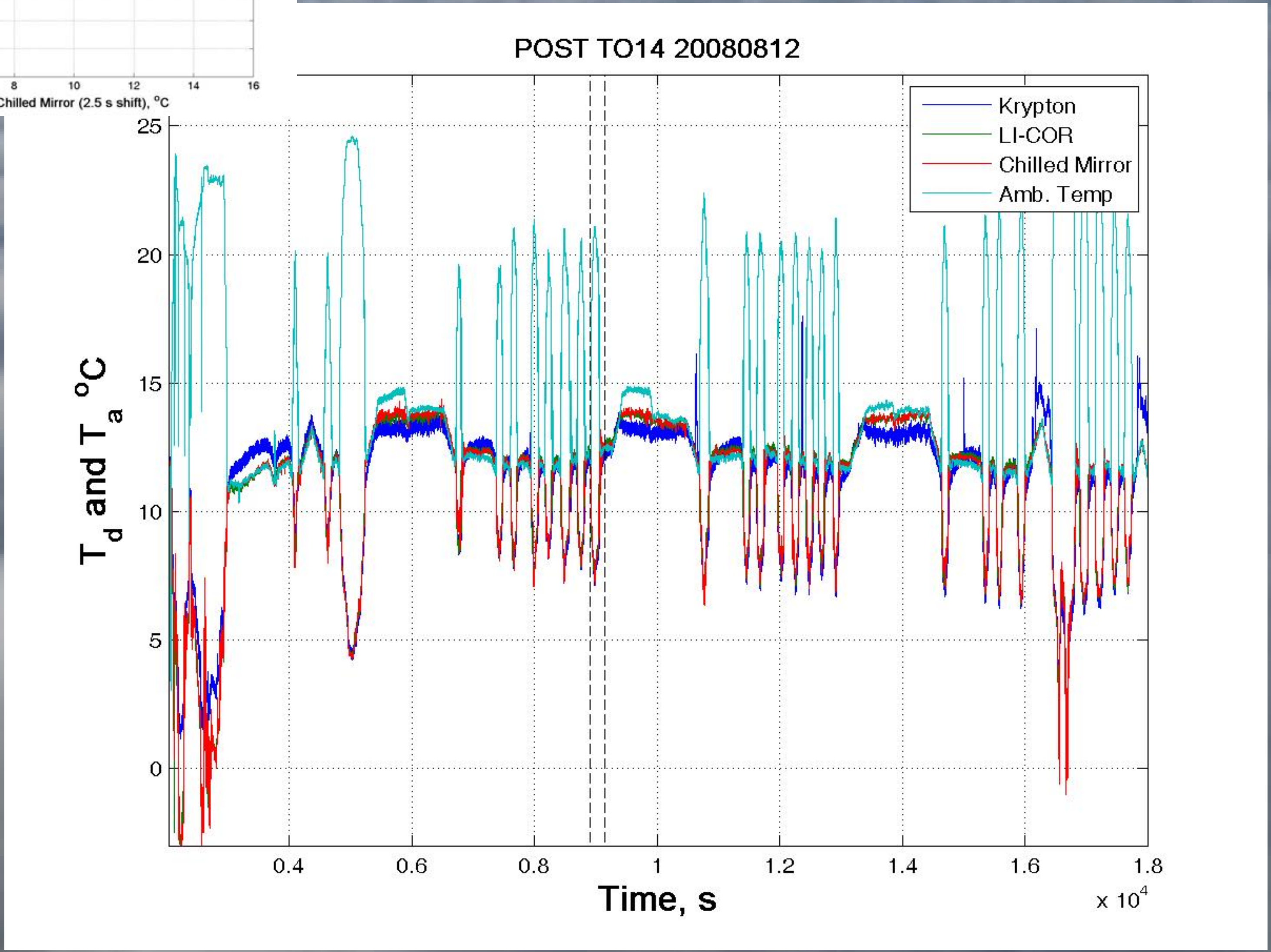
Pitching Maneuvers: w Test



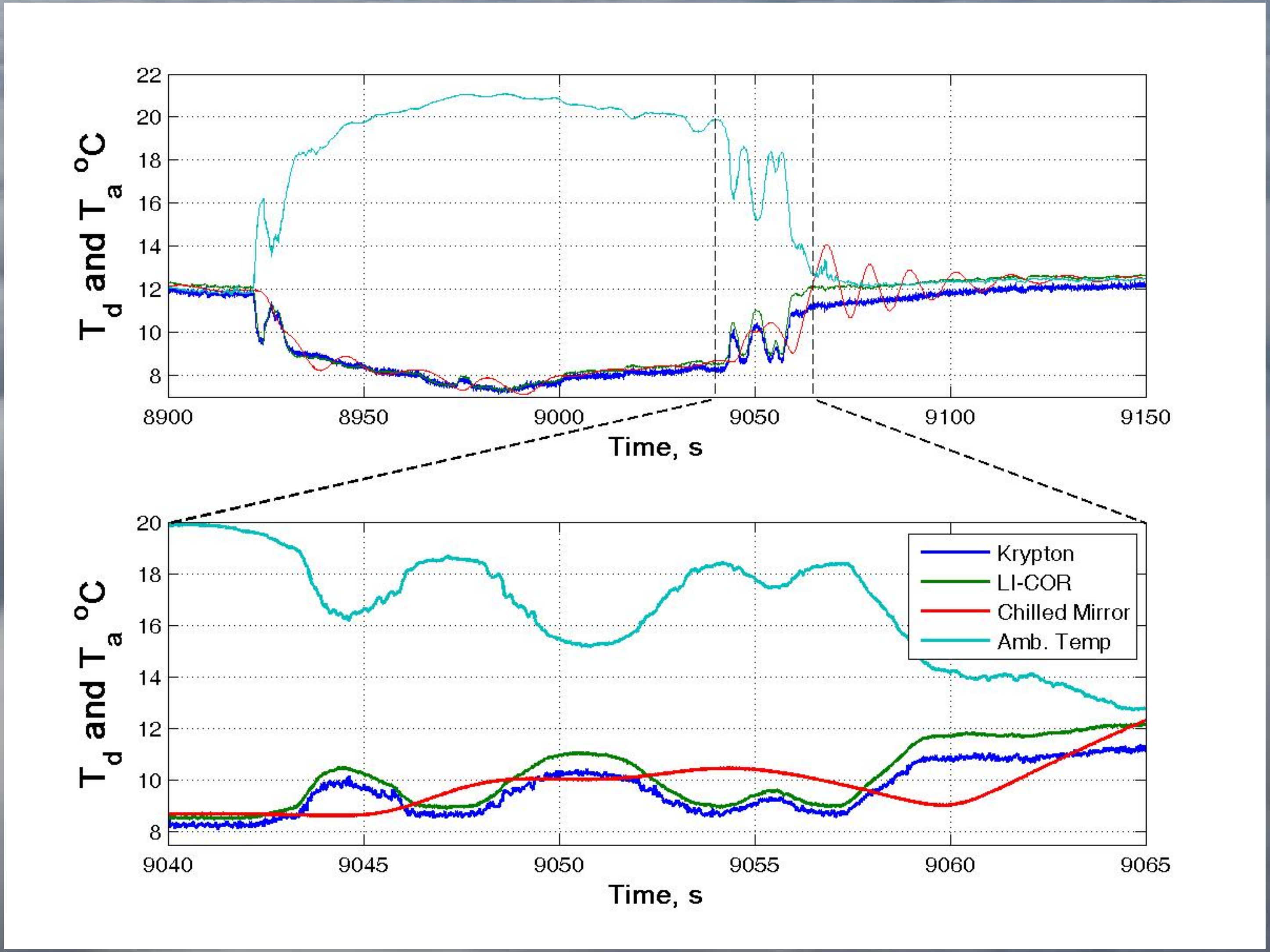
Rule of thumb: σ_w/σ_{Vz} <10% is acceptable

In Situ Humidity Calibrations

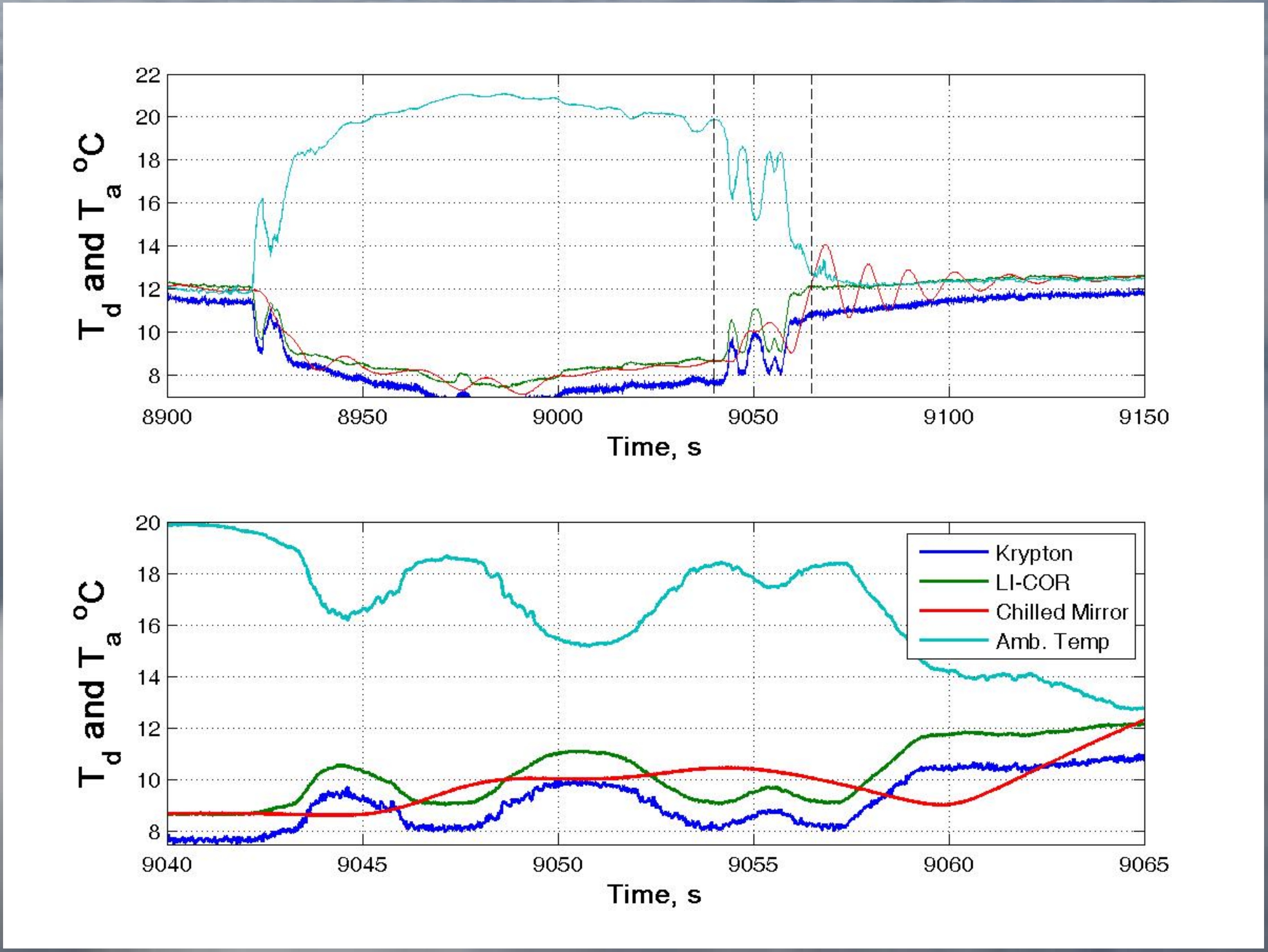


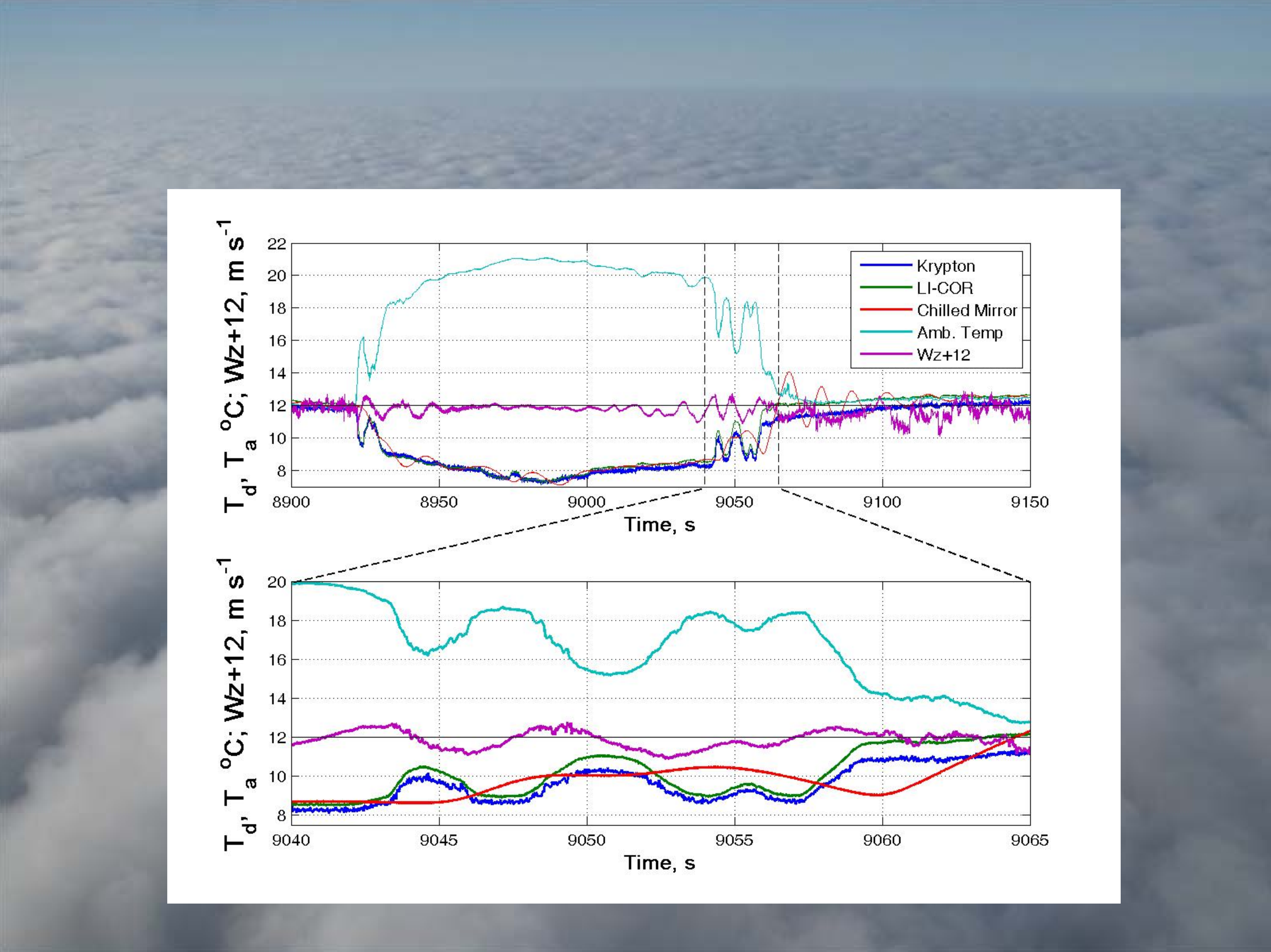


In Situ Humidity Calibrations

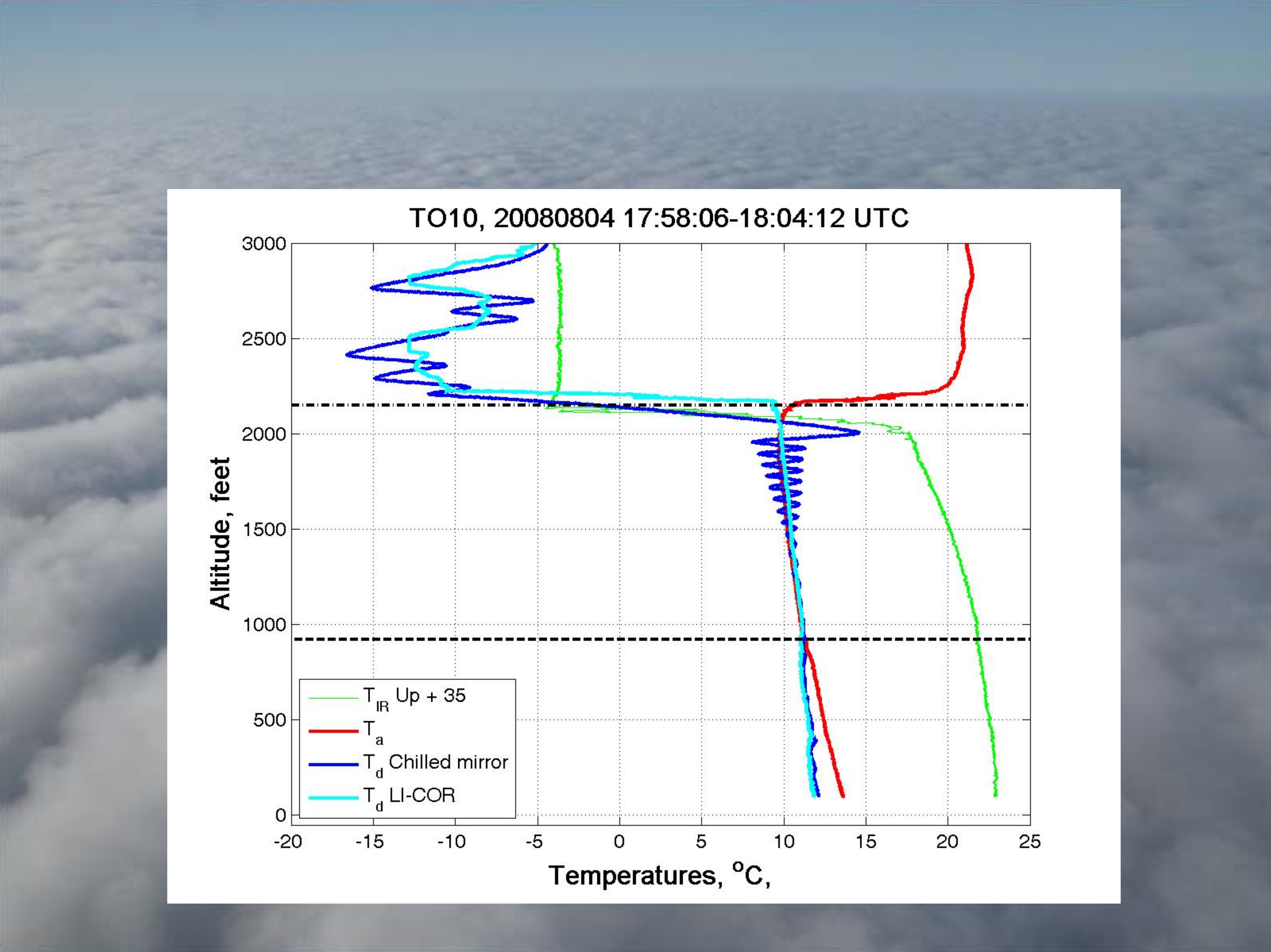


Older (Jan 9 2009) Humidity Calibrations





Krypton
LI-COR
Chilled Mirror
Amb. Temp
Wz+12
T_d, T_a °C; Wz+12, m s^{-1}
Time, s


TO10, 20080804 17:58:06-18:04:12 UTC
Altitude, feet
Temperatures, °C,
T IR Up + 35
T a
T d Chilled mirror
T d LI-COR
3000
2500
2000
1500
1000
500
0
-20
-15
-10
-5
0
5
10
15
20
25

Eddy Correlation Fluxes

$$Q_h = \rho c_p \overline{w'\theta'}$$

$$Q_e = L_v \overline{w'\rho_v'}$$

$$\tau_x = -\rho \overline{w'u'}$$

$$\tau_y = -\rho \overline{w'v'}$$

$$\tau = (\tau_x^2 + \tau_y^2)^{1/2}$$

where

u, v and w are along-, cross- and vertical wind components

ρ is the air density

c_p is the air specific heat at constant pressure

ρ_v is the water vapor density (absolute humidity)

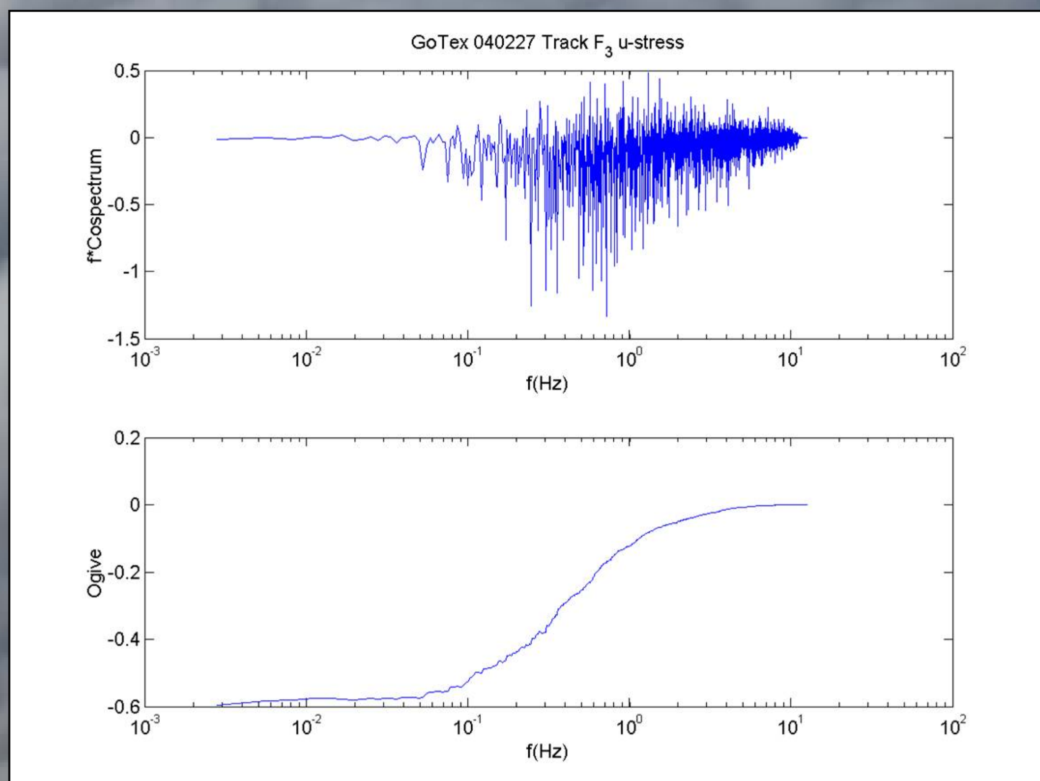
L_v is the latent heat of vaporization

Ogive Method

Ogive = Cumulative Integral of Cospectrum of w′ u′ (or w′ T′, w′ρ′$_v$, ...) from high to low frequencies. Asymptote as f ->0 is the **flux estimate.**

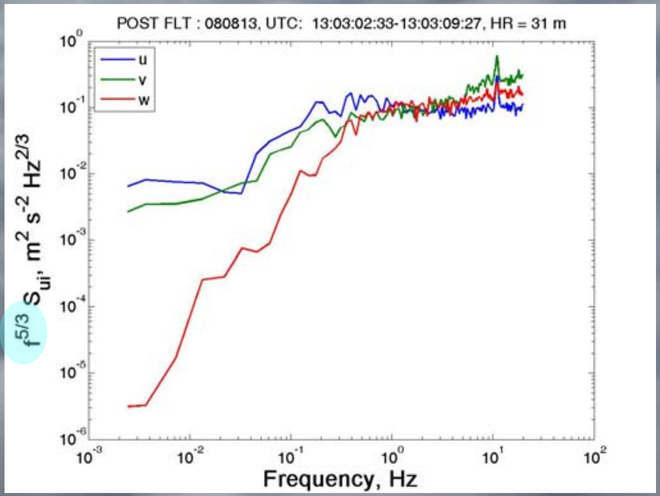
$$\overline{w'u'} = \int_0^\infty Co(w',u')df$$

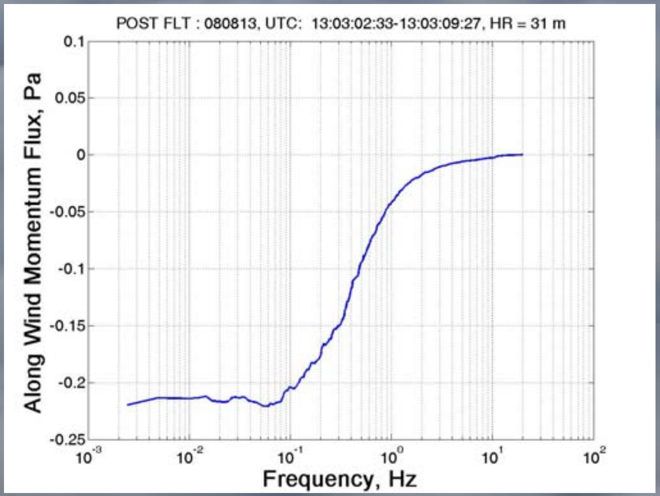
$$\mathcal{O}(f) = \int_\infty^f Co(w',u')df$$

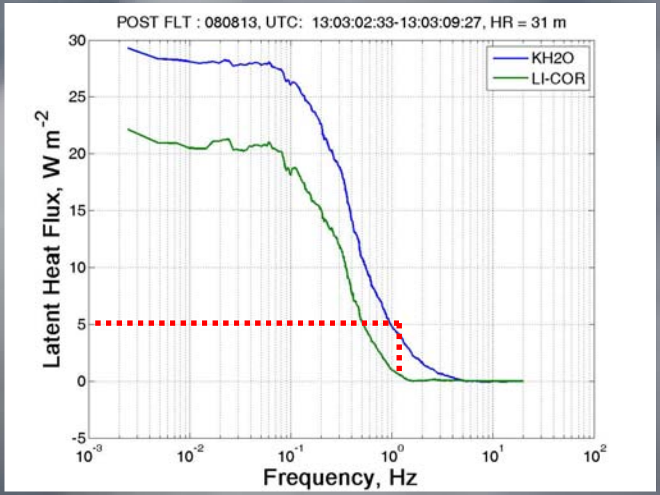


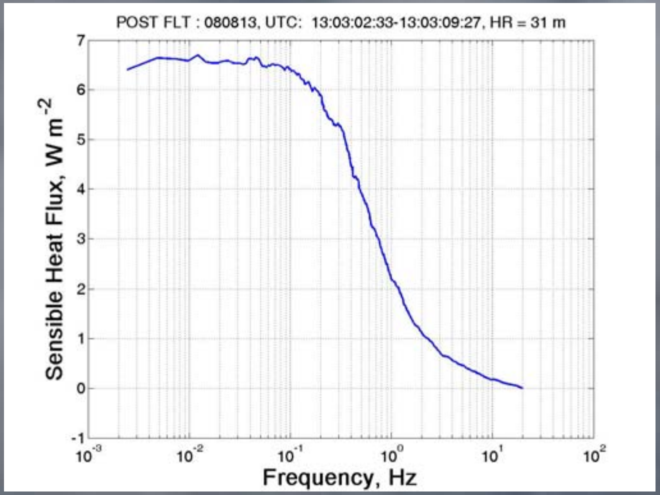
Example of Wind Spectra and Fluxes

TO15 080813, WS = 13 m s^{-1}









UCI 40-Hz ASCII Data made available to NCAR archive

Name	Description	Units	Accuracy
t	elapsed Time in seconds since 0 UTC of flight (data file) start day	s	0.5 ms
ap	Pressured Altitude (adjusted to radar altitude)	m	1 m
lat	Latitude	deg N (decimal)	< 0.00002 deg
lon	Longitude	deg E (decimal)	< 0.00002 deg
hdg	true HeaDinG from UCI's C-MIGITS III range [0 360] deg	deg	0.3 deg
wx	Wind component in the east direction (X-axis)	m/s	0.4 m/s
wy	Wind component in the north direction (Y-axis)	m/s	0.4 ms
wz	Wind component in the vertical direction (Z-axis)	m/s	0.2 m/s
ah	Absolute Humidity from UCI's LI-COR 7500	g/m^3	?
ta	static Ambient Temperature from UCI's Rosemount fast-response sensor	^oC	0.4 ^oC
td	ambient Dewpoint Temperature from CIRPAS's Edgtech Chilled mirror	^oC	0.4 ^oC
ts	Sea surface Temperature from CIRPAS's downlooking Heiman KT 19.85 IR sensor	^oC	0.4 ^oC
ps	Static atmospheric Pressure from fuselage flush ports and Setra 270 transduce	hPa	5 Pa
tas	True Air Speed (Dry Air)	m/s	0.2 m/s
rhoa	Moist Air density	kg/m^3	?
mr	Mixing Ratio from UCI's LI-COR 7500	g/kg	?
thet	potential temperature (theta)	K	0.4 ^oC
tvir	VIRtual Temperature	^oC	0.4 ^oC
thete	Equivalent potential temperature (thetae)	K	0.4 ^oC
tirup	Temperature from UCI's IR UPward-looking temperature sensor	^oC	?
flip	FLIP-flop 1/2 Hz GPS synchronisation signal from 1-Hz CIRPAS C-MIGITS III pulse	V	?
tdl	Dewpoint Temperature from UCI's LI-COR 7500	^oC	0.3 ^oC

Available Data on UCI's server

http://wave.eng.uci.edu/files/post/datacuts

User name:

Password:

40-Hz ASCII data

1-Hz MATLAB data

100-Hz (interpolated) "select" variables (Hermann's request)

Possibility to add 40-Hz MATLAB data

Latest version is January 09, 2009

Most likely a new version before end of this month (please report problems)

Data Policy

POST_uci_header_09January2009 - Notepad

File Edit Format View Help

```
%%%%%%%%%%%%%%%%%%%%%%%%%%
IMPORTANT NOTES TO USERS:
%%%%%%%%%%%%%%%%%%%%%%%%%%

A. The POST data policy specified by Hermann Gerber in his e-mail
message of 1/14/2008 (Communication #5) applies to the UCI POST data
set as quoted below:

  1. POST P.I.s have ready access to the data produced by the other P.I.s.
  2. The POST data is not available to the public for 1 year.
  3.  POST P.I.s can provide at any time copies of their probe's/sensor's
      data to whomever they chose.
  4. One year after the field study the archived data becomes public.
  5. Publications using another P.I.'s POST data give this other P.I. the option of being a co-author.

B. Please register as a UCI POST data user to be updated on future
modifications to the data set and for possible cooperation in the data
analysis and publication of results. To do so, please send a message
with "POST: UCI data registration" as the subject and your
contact/institution information in the message body to:

Djamal Khelif
University of California, Irvine
Dept. Mech. & Aerospace Eng.
Irvine, CA 92697-3975 USA
e-mail: dkhelif@uci.edu
Phone: 949 824 7437
```

What Next?

- Fill-in the blanks in the field catalog
- Implement newest humidity calibration method to all flights
- Fine-tune horizontal winds quality using the reverse-heading maneuvers
- Provide flux estimates for all level runs
- Find a "good way" to deal with turbulence data from porpoises (input needed)
- Analysis!