
UAS operations during BLLAST

An overview

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BLLAST - UAS flight summary



BLLAST workshop
06./07.02.2012, Firenze, Italy

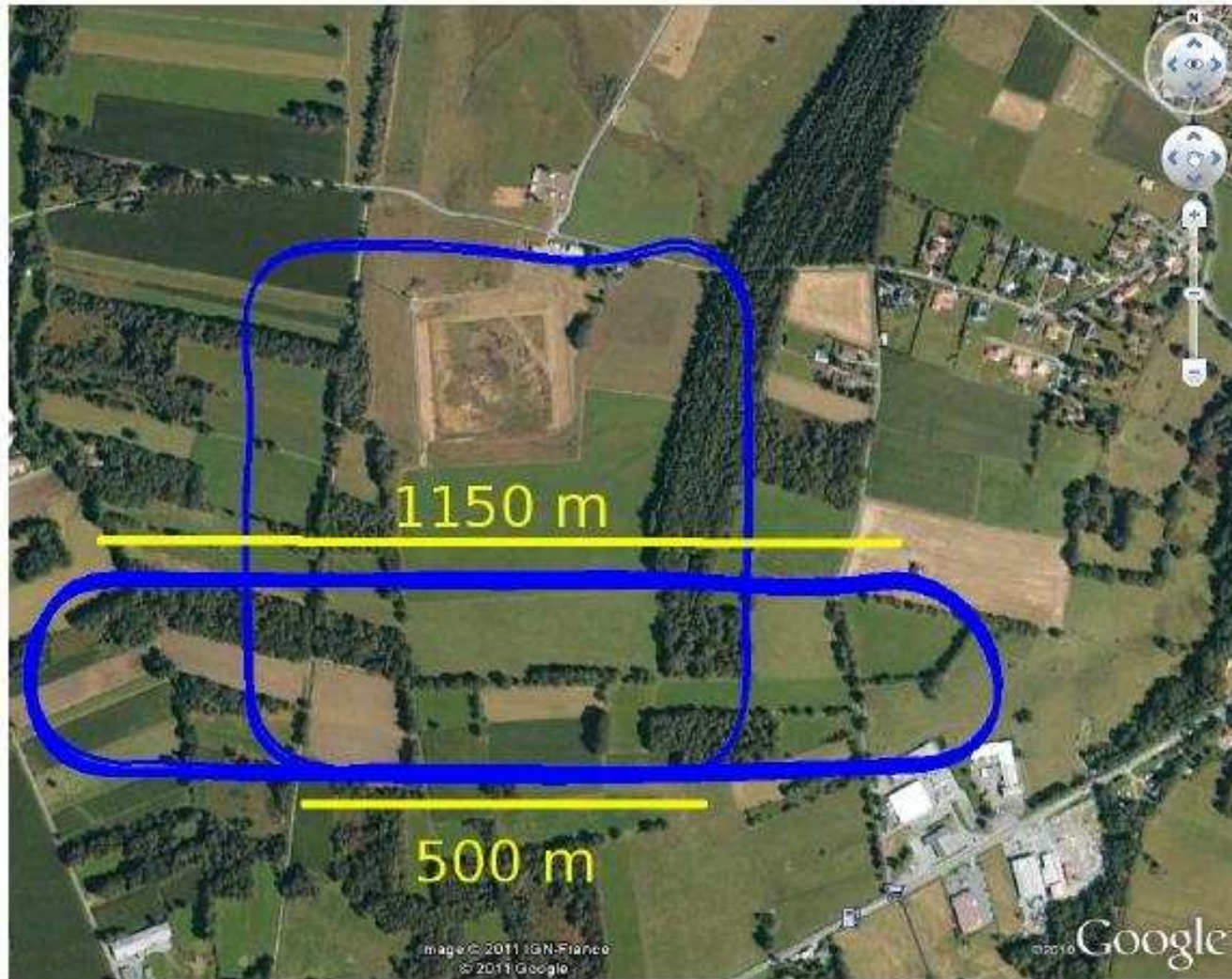
participating UAS groups

group	airframe	flights	flight days	in database
Bergen	3 SUMOs	299	23	yes
Braunschweig	2 M ² AV	13	4	yes
Tübingen	2 MASC			no
Oswestfalen-Lippe	Quadcopter	47	6	yes
Bremen	2 FunJet 1 Busca	20	4	no
Karlsruhe	Sirius	5 (?)	3	yes

M²AV flights

day	time	altitude [m]
30.06.	17:22	200, 400
30.06.	18:44	200, 400
01.07.	14:27	300
01.07.	18:47	200, 250, 300
02.07.	14:19	200, 250, 300
02.07.	16:27	200, 250, 300
02.07.	18:13	200, 250, 300
02.07.	20:20	150, 200, 250
05.07.	12:25	200, 250, 300
05.07.	14:25	250, 325, 400
05.07.	15:40	250, 325, 375, 400, 500
05.07.	17:10	250, 375, 500
05.07.	18:30	250, 375, 500

M²AV flight patterns



Quadcopter – Ostwestfalen-Lippe

total of 47 flights in the period 01.-05.07.2011

5 flights at edge site, the remaining at the small scale heterogeneity site at site 1

Quadcopter – Ostwestfalen-Lippe: ssh

Surface Temperature [°C] 03/07/2011 06:40 UTC

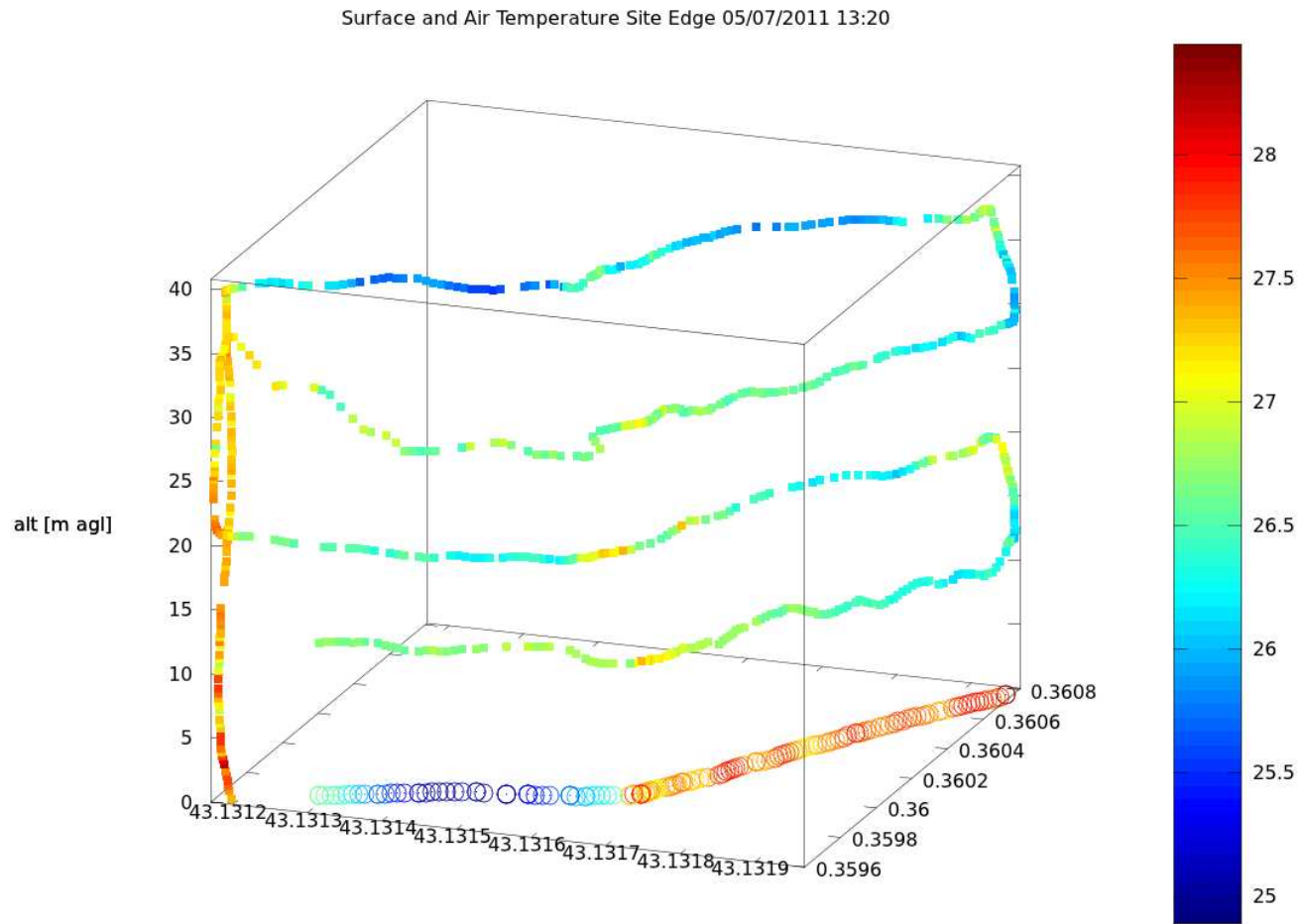


Quadcopter – Ostwestfalen-Lippe: ssh

Surface Temperature [°C] 03/07/2011 12:50 UTC



Quadcopter – Ostwestfalen-Lippe: site edge



Sirius – Karlsruhe site 1



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Sirius – Karlsruhe site 2



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FunJet/Busca - Bremen

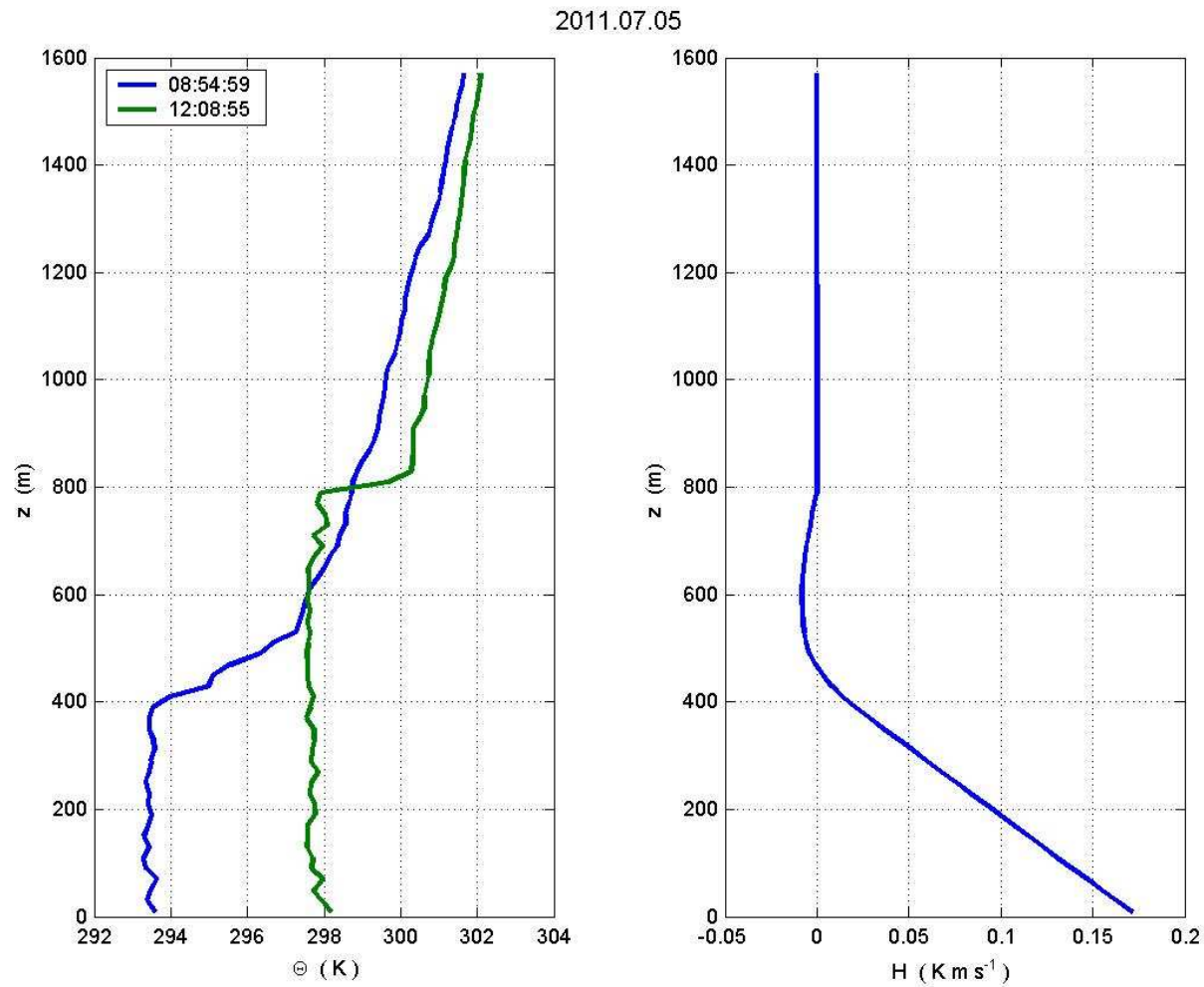
Date/Time	UAS	Site	Alt (AGL)	Purpose
04.07.2011, 17:25h	Funjet1	1b	800m	Test flight
04.07.2011, 19:31h	Busca	1b	1600m	profile flight
04.07.2011, 21:35h	Funjet1	1b	1410m	profile flight
05.07.2011, 11:47h	Funjet2	1b	110m	test flight
05.07.2011, 16:58h	Busca	1b	1600m	profile flight
05.07.2011, 18:35h	Funjet1	1b	820m	profile flight
05.07.2011, 21:32h	Funjet2	1b	350m	survey flight
07.07.2011, 12:00h	Funjet1	1a	276m	test flight
07.07.2011, 12:31h	Funjet1	1a	150m	test flight
07.07.2011, 13:06h	Funjet1	1a	150m	test flight
07.07.2011, 15:34h	Funjet1	1a	135m	test flight
07.07.2011, 16:49h	Funjet1 and Funjet2	1a	100m	formation flight
07.07.2011, 15:34h	Funjet1	1a	180m	flight in clouds
08.07.2011, 11:57h	Funjet1	1b	1485m	profile flight
08.07.2011, 12:25h	Funjet2	1b	700m	profile flight
08.07.2011, 12:35h	Funjet2	1b	1380m	profile flight
08.07.2011, 12:59h	Funjet1	1b	1400m	profile flight
08.07.2011, 13:32h	Funjet2	1b	1200m	profile flight
08.07.2011, 14:28h	Funjet2	1b	1460m	profile flight
08.07.2011, 14:57h	Funjet1	1b	120m	test flight

SUMO flights

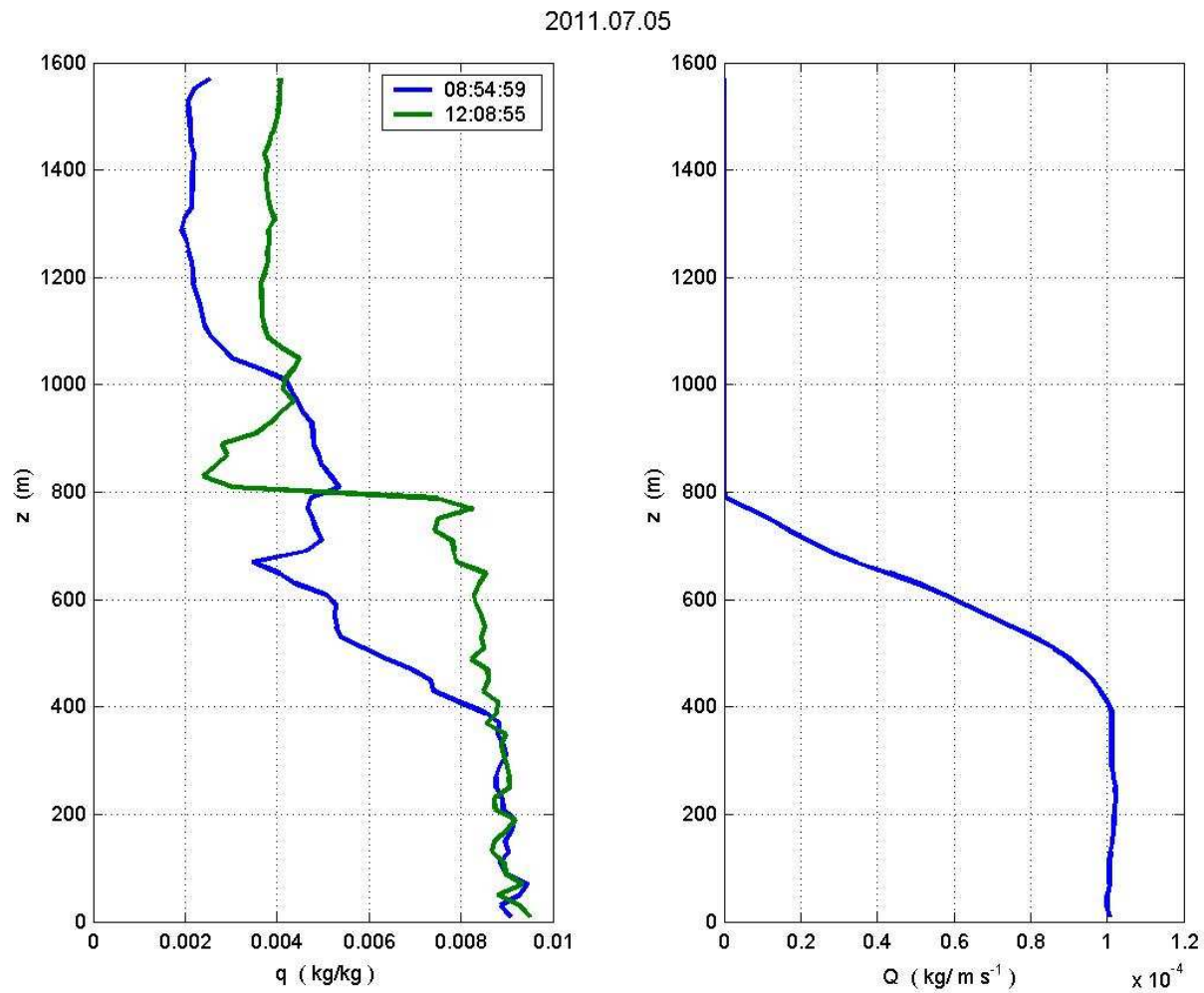
extended tables in the
different categories
available at
<http://boc.sedoo.fr/>

		total	test	profile	survey	trans.	turb.
13.06.2011		7	3				4
14.06.2011	IOP 0	3			1		2
15.06.2011	IOP 1	22	1		2		19
16.06.2011		1	1				
17.06.2011		11		7	2		2
18.06.2011		5		5			
19.06.2011	IOP 2	28		12	13		3
20.06.2011	IOP 3	23		11	10		2
21.06.2011		8		8			
22.06.2011		0					
23.06.2011		2		2			
24.06.2011	IOP 4	12		10	2		
25.06.2011	IOP 5	23	1	11	9		2
26.06.2011	IOP 6	25	1	11	8	1	4
27.06.2011	IOP 7	35		12	12		11
28.06.2011		0					
29.06.2011		0					
30.06.2011	IOP 8	18		12	6		
01.07.2011	IOP 9	11		6	5		
02.07.2011	IOP 10	17		14	3		
03.07.2011		6		6			
04.07.2011		9		9			
05.07.2011	IOP 11	14		13	1		
06.07.2011		7		7			
07.07.2011		8		8			
08.07.2011		4		4			
total:		299	7	168	74	1	49

SUMO profiles

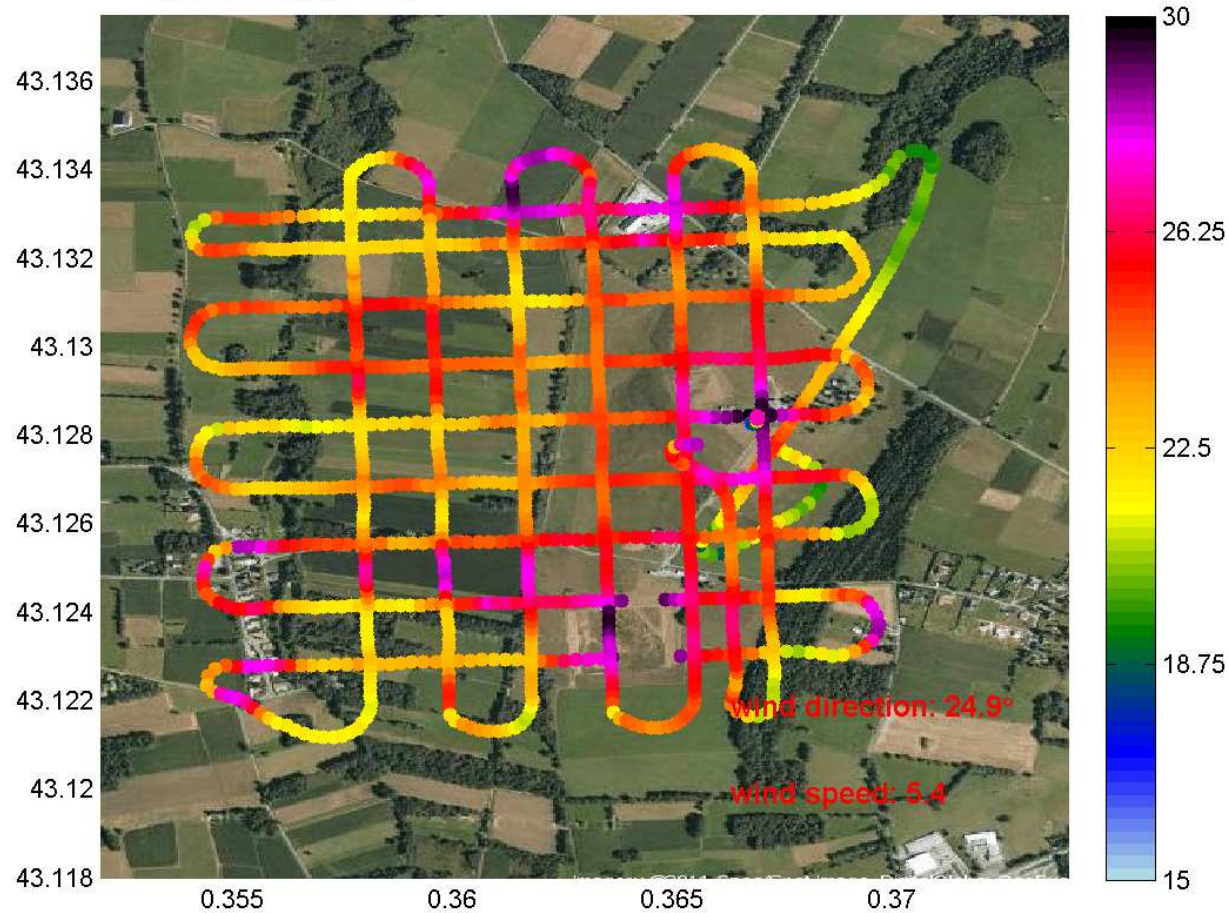


SUMO profiles



SUMO surveys

SUMO survey Uni. Bergen
Start Time: 20.06 11:33



SUMO surveys

SUMO survey Uni. Bergen
Start Time: 05.07 05:59



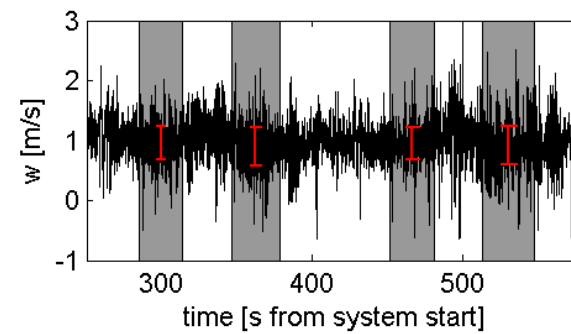
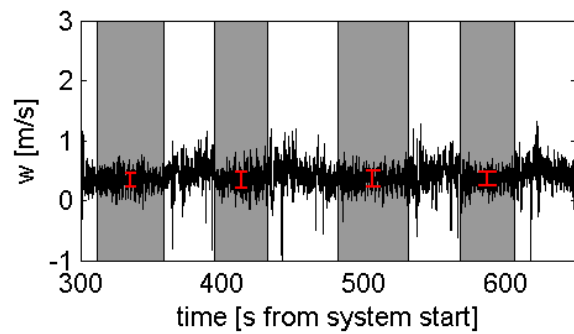
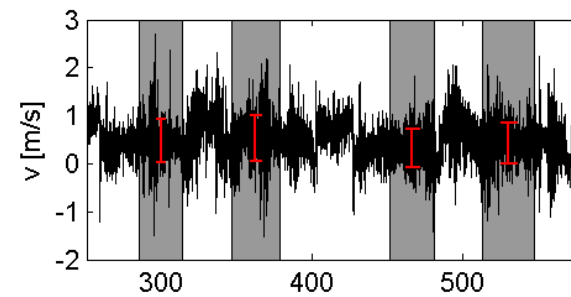
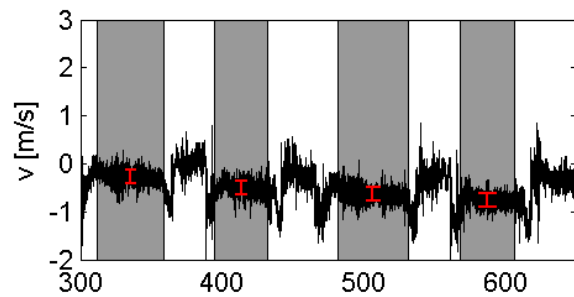
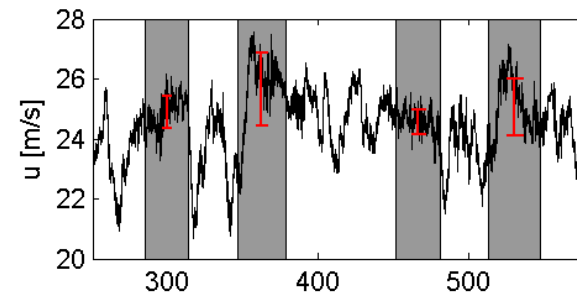
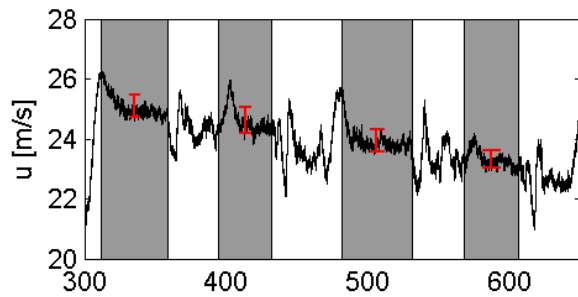
SUMO turbulence measurements



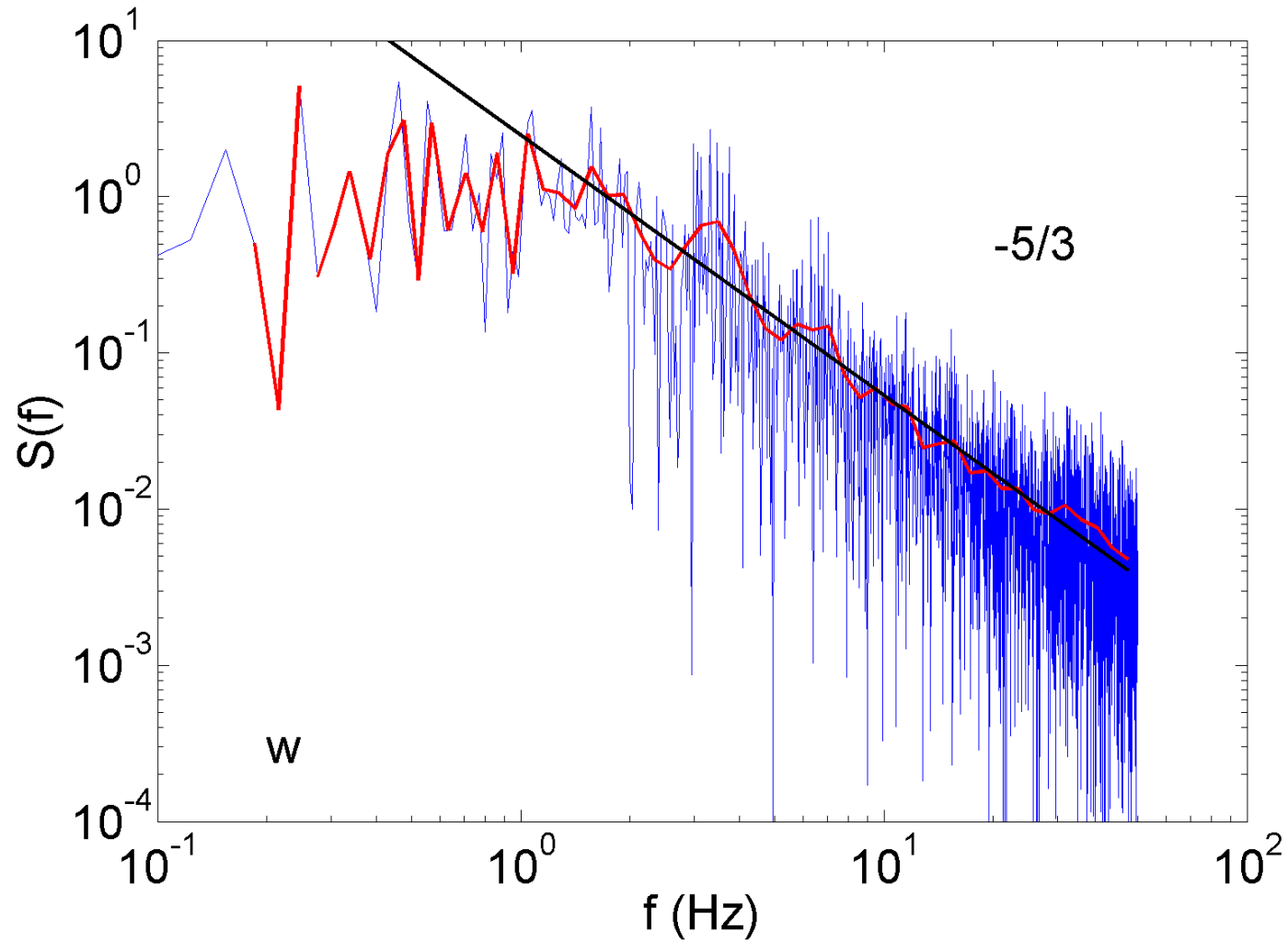
SUMO turbulence measurements



SUMO turbulence measurements



SUMO turbulence measurements



ongoing work with SUMO data

- determination of flux profiles from temperature and humidity profiles (Zbig)
- Anirban ?
- Estel ?

- master project dedicated to the evaluation of the BLLAST turbulence measurements with SUMO (due 01.06.2013)