Meteor 0210 (2020)

Stefan Kinne (11 feb 2am)

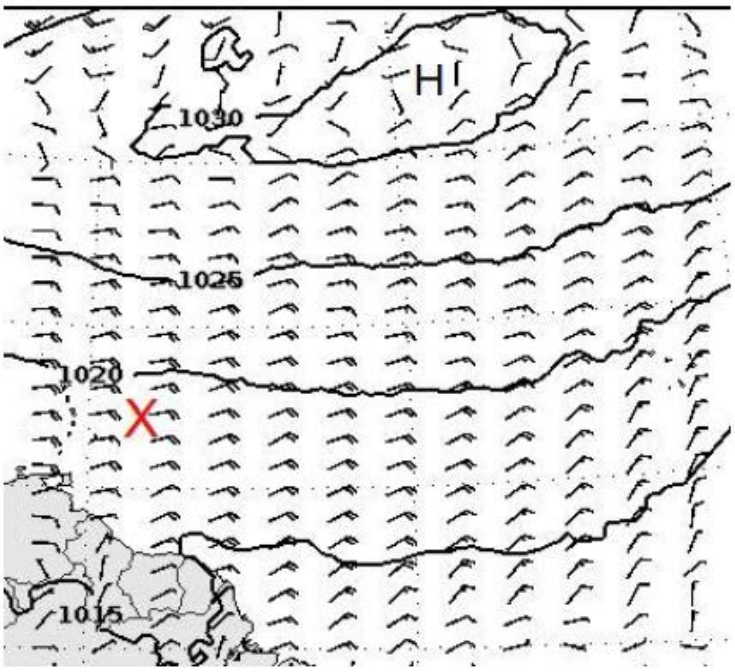
1. Objective

Transit with regular CTD to L1. Then park again in stationary position (into the wind) for investigations of the daily cycle in the northern METEOR region with CTD casts every 2 hours and regular radiosondes launches (2.45, 6.45, 10.45, 14.45, 16.33 (DWD), 18.45, 22.45UTC).

Over night the microbiology group took another sample at the center position of the Meteor track. The morning sunrise still indicated elevated aerosol levels. By noon be reached L1, but it was too windy to deploy the U.E.Anglia glider by boat. Thus we settled into our stationary routine and waited for aerosol and clouds to pass by. Aerosol levels were at least as high as yesterday with average AOD, 550nm at 0.4.

2. Synoptic Situation

Satellitenbild GOS16 **10.02.2020** 12:50 UTC



Vorhersage für Dienstag 12 UTC

Weather observations (every 3hr)

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20 02 10001 99127 70572 11598 10812 10267 20209 40178 53010 72580 81200 22202 04275
2//// 3//// 4//// 5//// 6//// ICE /////
 20 02 10031 99130 70572 46/// /0813 10264 20198 40182 50004 7//// 8//// 22202 04274
2//// 3//// 4//// 5//// 6//// ICE /////
 20 02 10061 99133 70572 13/// /0811 10261 20203 40173 58009 7//// 8//// 22282 04272
2//// 3//// 4//// 5//// 6//// ICE /////
 20 02 10091 99133 70572 46/// /0810 10261 20200 40169 55004 7//// 8//// 22200 04271
2//// 3//// 4//// 5//// 6//// ICE /////
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 20 02 10121 99137 70572 11597 20711 10262 20206 40189 53020 70300 82800 22202 04270
20302 308// 40805 5//// 6//// ICE /////
 20 02 10151 99140 70572 41597 10712 10262 20201 40197 50008 70180 81200 22202 04271
20302 307// 40805 5//// 6//// ICE /////
 20 02 10181 99142 70572 11597 10710 10257 20201 40181 58016 70680 81200 22201 04272
20302 307// 40805 5//// 6//// ICE /////
 20 02 10211 99142 70572 41597 30611 10259 20201 40172 55009 70600 83200 22200 04272
20302 307// 40805 5//// 6//// ICE /////
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A sunny, windy and dusty day, though with more low clouds at L1 than usual. Intermittently more convection often with traces of precipitation. No cirrus.

3. Cruise-day Elements

IWV (integrated water vapor): 29 kg /m2 +/- 3
LWP (liquid water path): 51 g /m2 +/- 237

Time	0-3UTC	4-6UTC	7-9UTC	10-12UTC	13-15UTC	16-18UTC	19-21UTC
Height_m	849.65	804.93	782.57	849.65	760.21	916.72	804.93
max_hydro_frac_low	0.18	0.09	0.05	0.05	0.10	0.06	0.16
Height_m	1520.42	1207.39	1207.39	1207.39	2481.86	1207.39	1587.49
max_hydro_frac_mid	0.18	0.01	0.00	0.02	0.13	0.02	0.15
Height_m	12836.47	12836.47	12878.56	12836.47	6138.04	12836.47	12836.47
max_hydro_frac_high	0.00	0.00	0.00	0.00	0.01	0.00	0.00

low=up to 1200m, mid=up to 6000m, high=up to 15000m

hourly means of ship data (1st line 0-1 UTC, 2nd line 1-2 UTC … last line 23-24 UTC)

salinity PSU	Tdew °C	Tair °C	Twater °C	TrueDir deg	RH %	rel.Wind m/s	trueWind m/s	lw Rad W/m²	sw Rad W/m²	lat °N	lon °E
35.2014	20.59	26.59	27.41	80.38	69.28	13.71	12.29	391.6	-1	12.78	-57.25
35.2274	20.71	26.27	27.42	75.32	71.13	14.1	12.05	412.48	-1.05	12.9	-57.25
35.213	20.3	26.52	27.41	74.8	68.37	13.2	12.46	397.33	-1	13	-57.25
35.2298	20.29	26.35	27.39	82.82	69	14.04	12.49	386.43	-1	13.07	-57.24
35.2272	20.45	26.27	27.32	80.23	69.9	13.34	11.47	388.3	-1	13.24	-57.25
35.1594	20.31	26.21	27.2	76.1	69.58	11.41	11	391.78	-1	13.3	-57.25
35.1555	20.05	26.1	27.2	77.65	68.9	11.36	10.97	387.28	-1	13.3	-57.25
35.1691	19.95	26.07	27.2	78.9	68.6	11.1	10.71	386.7	-1	13.3	-57.25
35.1611	19.9	26.09	27.18	76.37	68.4	11.09	10.43	383.78	-1	13.3	-57.25
35.259	20.01	26.07	27.04	77.68	68.9	13.25	10.78	391.75	-1	13.41	-57.25
35.2455	20.2	26.09	27	70.8	69.62	12.21	10.51	390.27	24.38	13.57	-57.25
35.2691	20.26	26.16	27.01	71.18	69.57	12.76	11.13	391.87	170.12	13.62	-57.24
35.3801	20.32	25.48	27.09	70.7	72.77	14.87	12.05	412.18	348.37	13.78	-57.25

35.2847	20.17	25.73	27.15	62.65	71.05	12.34	11.45	396.35	590.43	13.89	-57.25
35.2967	20.2	26.14	27.15	69.73	69.42	13.75	11.57	392.78	778.92	13.93	-57.24
35.2964	19.73	26.24	27.11	73.72	66.97	14.21	11.51	391.08	854.32	14.1	-57.25
35.3152	19.41	26.2	27.18	63.75	65.82	11.4	11.03	391.83	874.98	14.18	-57.25
35.3144	19.84	25.88	27.2	63.8	69.05	11.26	10.88	394.27	773.02	14.18	-57.25
35.3166	20.21	25.63	27.19	58.45	71.68	10.96	10.58	408.67	522.07	14.18	-57.25
35.3014	20.29	25.71	27.16	60.22	71.7	10.52	10.16	396.32	456.15	14.18	-57.25
35.3078	20.13	25.92	27.2	60.07	70.03	10.9	10.52	392.48	250.95	14.18	-57.25
35.3143	20.78	25.74	27.18	54.33	73.75	11.71	11.36	402.08	33.32	14.18	-57.25
35.3089	20.57	25.82	27.12	68.37	72.4	11.78	11.41	403.68	-0.9	14.18	-57.25
35.3104	20.37	25.77	27.15	62.73	71.71	12.59	12.23	390.75	-1	14.18	-57.25

inter-calibration: **none**
CTD stations: **9**
radiosondes: **7**
overflights: **none**

station no.	UTC	device	action	latitude	longitude	depth	contact person
M161 163	10 feb 2020 / 02:16-02:49	CTD	CTD	13°00.031 N	57°14.742' W	800	Baranowski
M161 164	10 feb 2020 / 05:02-05:59	CTD	CTD	13°17.997 N	57°14.723' W	800	Baranowski
M161 165	10 feb 2020 / 07:12-07:38	CTD	samples	13°17.997 N	57°14.724' W	250	Mohr
M161 166	10 feb 2020 / 10:39-11:13	CTD	CTD	13°35.641 N	57°14.708' W	800	Baranowski
M161 167	10 feb 2020 / 13:27-14:00	CTD	CTD	13°53.330 N	57°14.722' W	800	Baranowski
M161 168	10 feb 2020 / 16:08-16:47	CTD	CTD	14°19.920 N	57°14.726' W	800	Baranowski
M161 169	10 feb 2020 / 18:29-19:09	CTD	CTD	14°19.922 N	57°14.725' W	800	Baranowski
M161 170	10 feb 2020 / 20:33-21:08	CTD	CTD	14°19.924 N	57°14.726' W	800	Baranowski
M161 171	10 feb 2020 / 22:27-23:02	CTD	CTD	14°19.922 N	57°14.725' W	800	Baranowski

4. Instrument Status

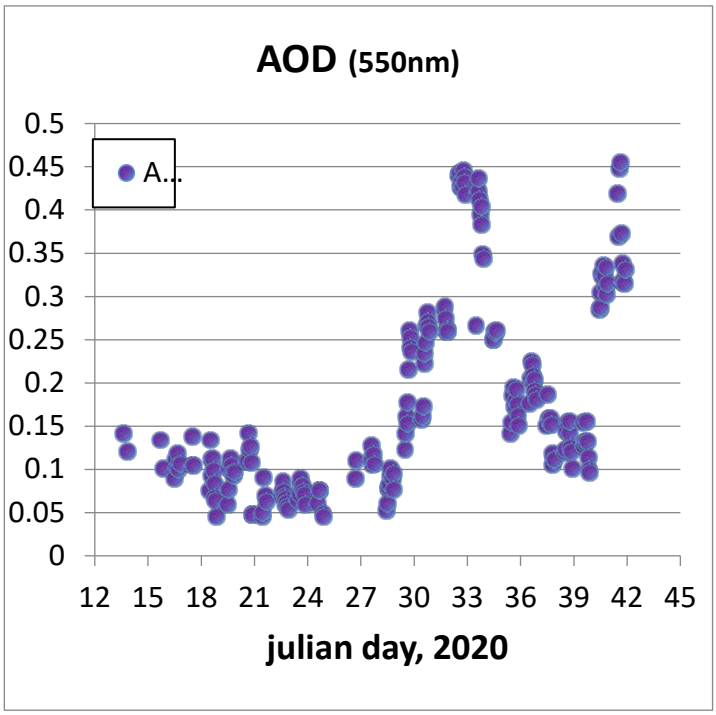
Instrument-Status (**W**-working, **P**-partially-working, **F**-failure, **U**-untested, **R**-ready, **L**-lost)

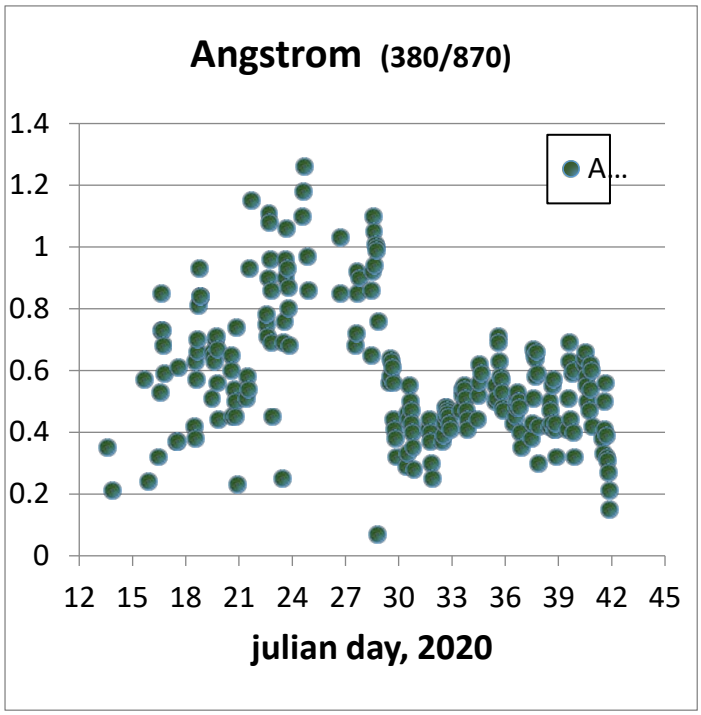
			status	operators
radiosondes			W	Katharina, Imke, Yanmichel, Almuth, Kevin, Sebastian, Geiske
cloud-radar			W	Heike, Johannes
micro-radiometer			W	Heike, Johannes
spect-radiometer			W	Heike, Johannes
Raman-lidar			W	Ludwig
cloud-kite			L	Oliver, Marcel, Marcel, Antonio, Robert, Sanola
Picarro			W	Sebastian

micro-biology			W	Wiebke, Jan, Abiel
ADPC ocean curr.			W	Callum, Beth
thermosalinograph			W	Callum, Beth
glider			W	Callum, Beth
UAV			W	Darek, Jakub, Michal, Wojciech
eddy-flux-data			W	Katharina, Imke, Heike
wind-lidar (DTU)			W	Geiske, Kevin
wind-lidar (Bre)			P	Geiske, Kevin
MAX-DOAS			W	Alma
ceilometer			W	Stefan
cloud camera			W	Stefan
sunphotometer			W	Stefan, Przemek, Andreas, John, Sanola
aero scat/abs			W	Przemek (Mr P)
WRAS (aero size)			W	Alma
CTD			W	Darek, Przemek, Beth, Callum, Alma, Sanola, Kevin, Robert, Wojtek, Almuth
Rodney			W	Darek, Jakub, Przemek

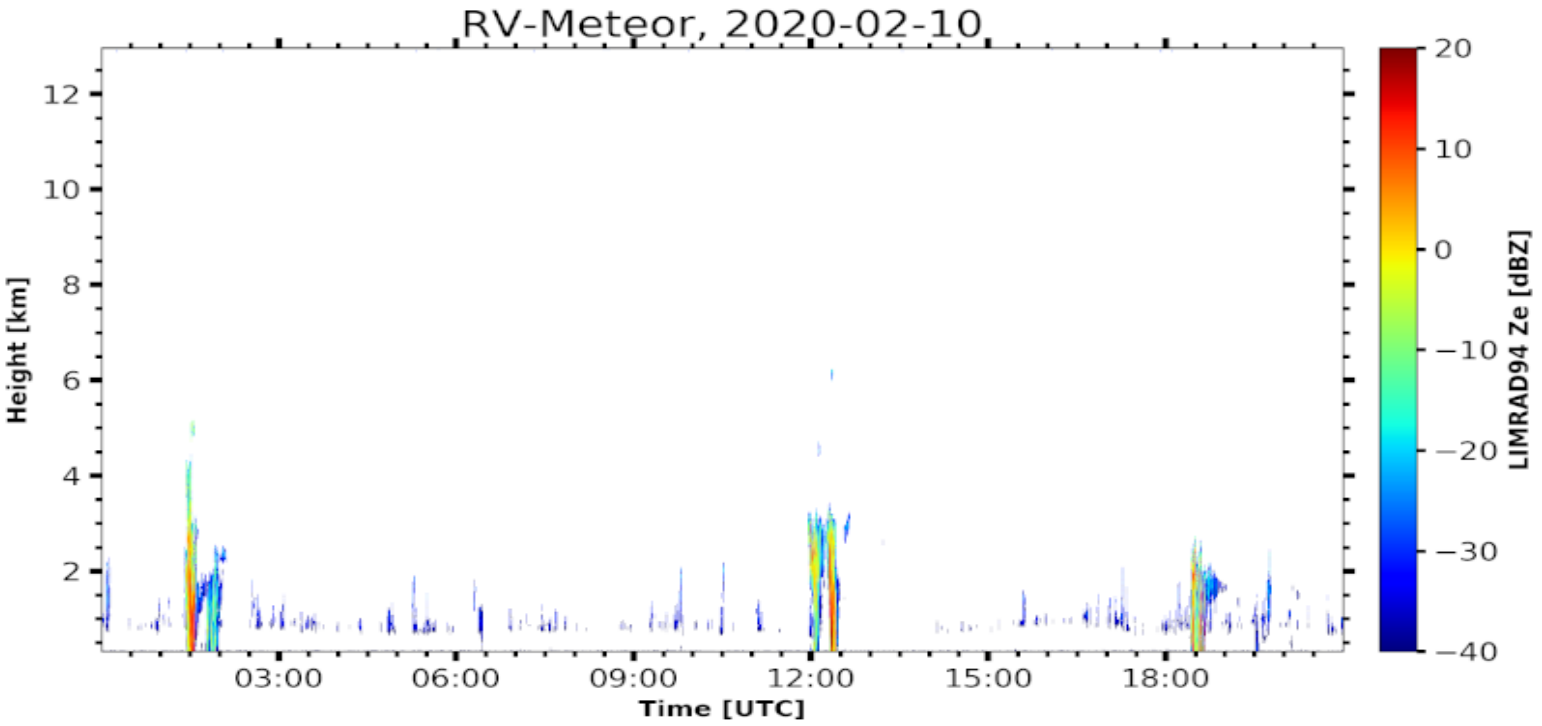
5. Outlook

We will stay until noon at L1 and then head southward. Tomorrow evening we will have the board-party (so tomorrow's report will likely be late). A special highlight will be the visit of the MERIAN tomorrow morning at about 8am. The MERIAN will come alongside for the exchange of smaller items via a bucket (as waves are too high to set out a boat savely).

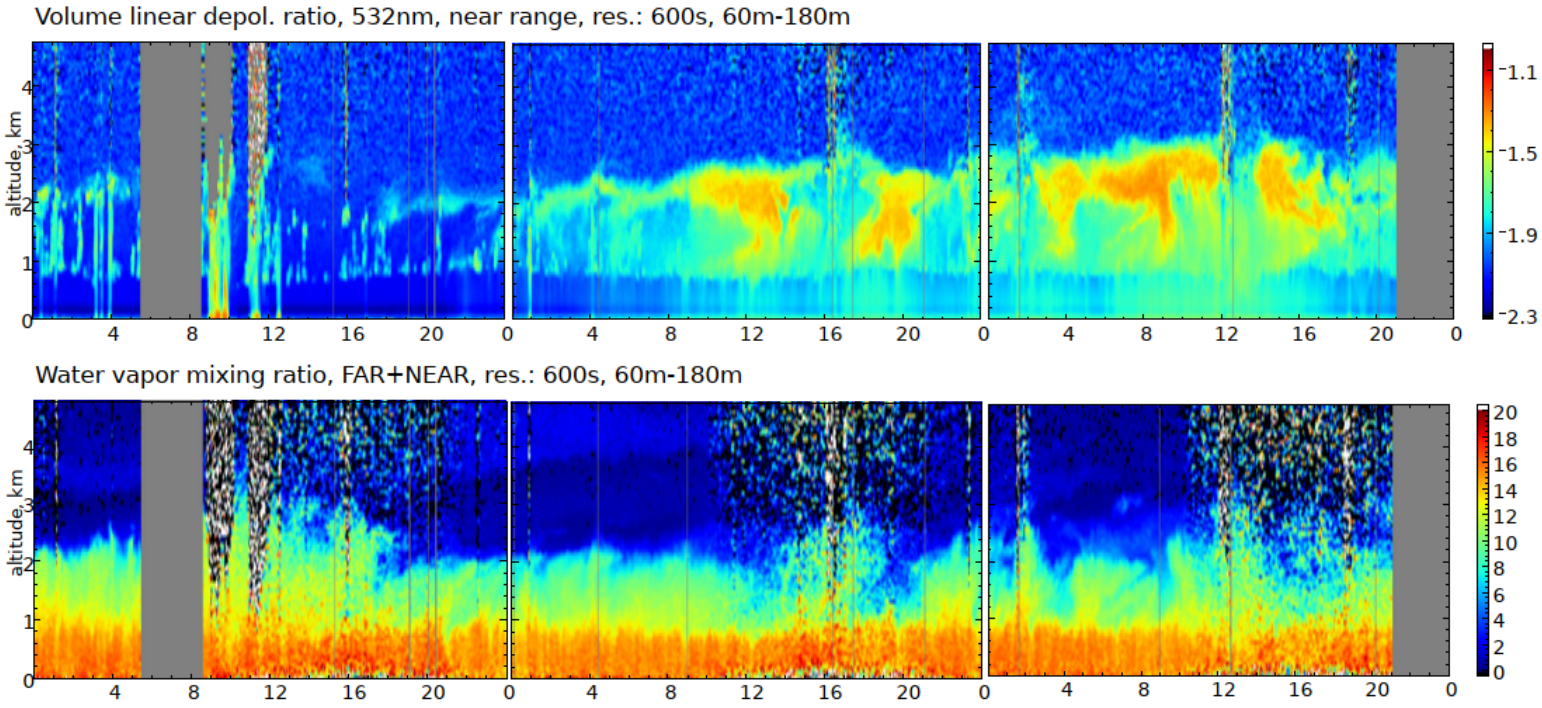




AOD and Angstrom parameter (inverse size) until Feb10



METEOR radar for Feb10



RAMAN lidar data on the METEOR on Feb 8-10 (depolarization and water vapor)

Notice that dry air with dust (with a depolarization signal) is pulled to lower altitudes (into the boundary layer) before and after local convection … always near noon time ~ 16z on each day