

Meteor 0131 (2020)

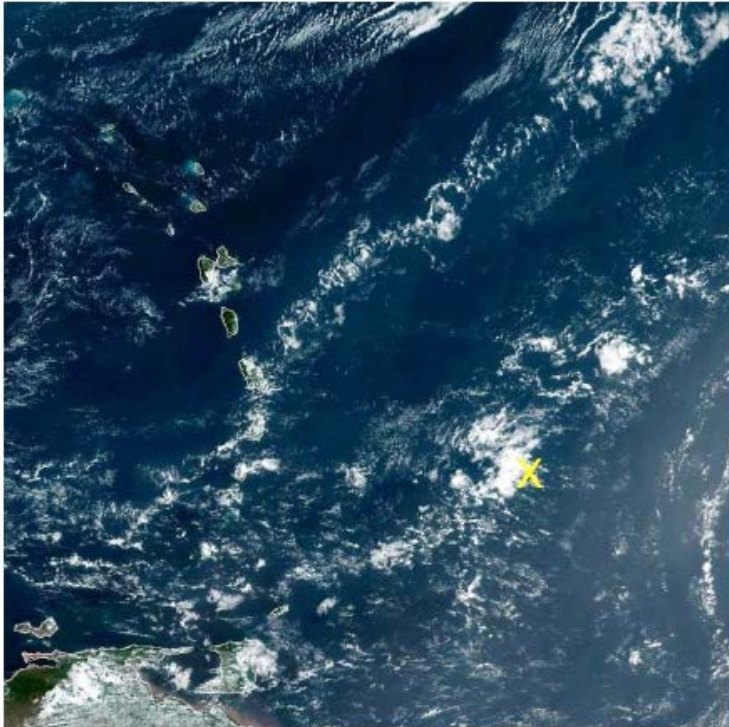
Stefan Kinne (1 feb 2am)

1. Objective

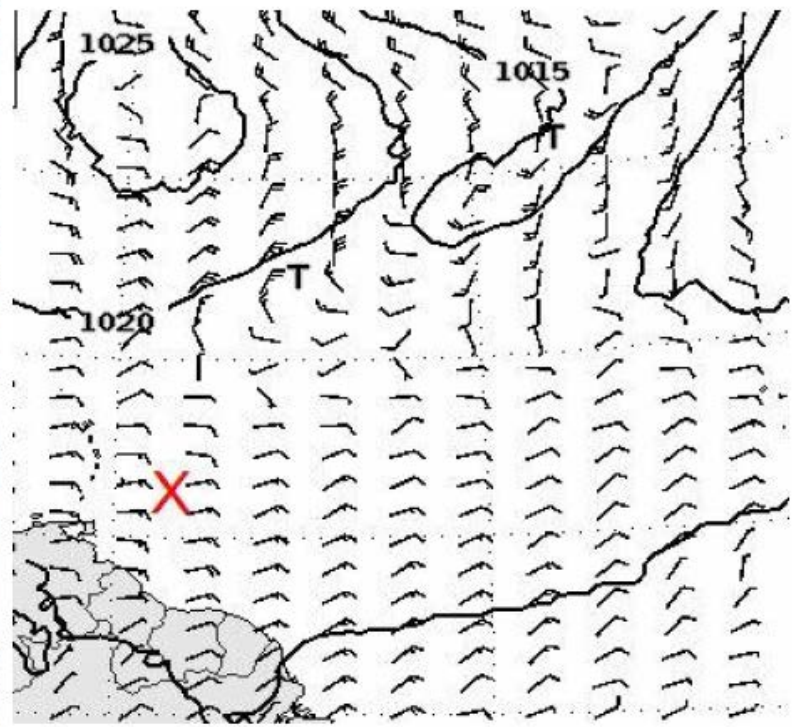
After the nighttime cloud-kite just collect data for regional statistic by continuing 3 hourly CTDs and radiosonde launches all the way to the northern track point (14d 28.5m N, north of L1). Seven radiosondes were launched at 2.45, 6.45, 10.45, 14.45, 16.33 (DWD), 18.45 and 22.45 UTC.

In the early morning we had heavy rain, which almost brought the balloon (even without instruments) down. Otherwise this was just a regular CTD and regular radiosonde launch day. Dust was still in the air. The mid-visible AOD was about 0.25 (that is ca 0.15 above background) over the entire day. NAAPS forecasts indicate a mix of dust (from the Sahara) and biomass/wildfire burning (from west Africa). This mixture is also a possible reason why the volume depolarization signal (indicating non-sphericity of particles) was not so strong.

2. Synoptic Situation



Satellitenbild GOES16 31.01.2020 13:20 UTC



Vorhersage für Samstag 12 UTC

Weather observations (every 3hr)

```
20 01 31001 99133 70573 11497 10807 10266 20220 40161 53012 70200 81200 22262 04275
2//// 3//// 4//// 5//// 6//// ICE ////
20 01 31031 99133 70573 46//// /0806 10265 20222 40163 50002 7//// 8//// 22261 04274
2//// 3//// 4//// 5//// 6//// ICE ////
20 01 31061 99133 70569 16//// /0708 10263 20222 40155 56008 7//// 8//// 22222 04272
2//// 3//// 4//// 5//// 6//// ICE ////
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20 01 31091 99134 70570 46/// /0804 10240 20221 40166 53011 7///// 8///// 22271 04272
2///// 3///// 4///// 5///// 6///// ICE /////
20 01 31121 99136 70572 11497 80907 10257 20225 40185 53019 72582 883// 22272 04272
20100 309// 40702 5///// 6///// ICE /////
20 01 31151 99138 70572 41497 81008 10267 20226 40184 58001 70182 883// 22281 04273
20201 309// 40702 5///// 6///// ICE /////
20 01 31181 99141 70572 11497 31107 10267 20224 40167 58017 70681 83200 22202 04271
20201 310// 40703 5///// 6///// ICE /////
20 01 31211 99144 70572 41497 20906 10265 20221 40166 55001 70680 82200 22281 04270
20201 309// 40703 5///// 6///// ICE /////

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This morning we had heavy rain (which almost brought the helikite ballon down). Until noon it was cloudy and then it cleared up, with only very few low altitude clouds (no cirrus). Elevated aerosol continued throughout the day, also to prevent a spectacular sunset.

3. Cruise-day Elements

IWV (integrated water vapor): 33 kg /m2 +/- 7
LWP (liquid water path): 686 g /m2 +/- ???

Today we did some final sampling strategy tests with the cloud-radar which led to inconsistent data all day long

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/m ²	sw Rad W/m ²	lat °N	lon °E
35.4864	21.95	26.94	27.45	86.63	73.83	3.24	7.29	397.92	-1.92	13.3	-57.37
35.5058	22.08	26.52	27.46	85.4	76.15	7.56	7.01	397.47	-1.23	13.3	-57.41
35.4686	22.19	26.46	27.39	80.47	76.98	10.44	7.29	409.92	-1.02	13.3	-57.36
35.3145	22.05	26.46	27.37	80.37	76.42	12.63	8.57	399.08	-1.03	13.3	-57.23
35.1604	22.05	26.36	27.26	80.05	76.9	12.07	7.99	402.03	-1	13.3	-57.09
35.1942	22.11	26.3	27.2	74.77	77.35	12.34	8.3	401.15	-1	13.3	-56.95
35.3125	22.34	26.16	27.2	69.95	79.15	8.15	7	421.5	-1.08	13.3	-56.86
35.3245	22.06	25.56	27.2	73.03	80.57	8.28	7.94	432.32	-0.67	13.3	-56.85
35.3103	21.97	23.95	27.14	69.1	88.28	6.19	6.27	438.4	-0.4	13.37	-56.91
35.2706	22.31	23.46	27.16	114.65	92.8	4.03	4.26	444.05	0	13.44	-56.99
35.2508	22.23	24.67	27.15	80.35	85.88	2.83	3.08	450.33	7.78	13.47	-57.03
35.2194	22.21	25.37	27.17	116.35	82.23	2.8	3.47	452.2	48.65	13.54	-57.16
35.2217	22.11	26.06	27.23	89.62	78.57	6.38	7.02	444.9	224.78	13.59	-57.24
35.2194	22.29	26.54	27.2	94.63	77.13	8.93	8.19	435.25	426.62	13.64	-57.25
35.2717	22.39	26.61	27.27	92.28	77.22	8.7	7.65	442.88	421.85	13.78	-57.25
35.3461	21.92	26.77	27.38	101.73	74.28	7.6	7.35	423.18	755.78	13.88	-57.25
35.365	21.92	26.73	27.38	102.07	74.57	8.16	7.85	406.67	822.2	13.93	-57.24
35.4665	22.16	26.74	27.29	106.53	75.57	7.24	7.37	407	803.93	14.06	-57.24
35.6754	22.07	26.67	27.19	112.15	75.37	7.19	7.15	407.73	520.37	14.17	-57.24
35.7256	21.89	26.74	27.21	113.97	74.32	6.61	6.59	394.72	460.35	14.19	-57.25

35.5375	21.71	26.63	27.21	98.7	74.02	7.06	5.81	396.1	229.05	14.31	-57.25
35.435	21.97	26.39	27.1	97.08	76.28	7.16	6.16	391.87	36.4	14.44	-57.25
35.4807	21.77	26.32	27.12	104.63	75.62	8.44	7.11	389.23	-1.23	14.46	-57.24
35.4268	21.96	26.33	26.96	100.36	76.61	8.88	7.09	398.49	-1	14.36	-57.24

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

station no.	UTC	device	action	latitude	longitude	depth	contact person
M161 89	31 jan 2020 / 00:56-01:29	CTD	CTD	13°17.998 N	57°25.016' W	800	Baranowski
M161 90	31 jan 2020 / 06:59-07:35	CTD	CTD	13°18.003 N	56°50.907' W	800	Baranowski
M161 91	31 jan 2020 / 09:24-10:00	CTD	CTD	13°26.896 N	56°59.538' W	800	Baranowski
M161 92	31 jan 2020 / 12:24-13:01	CTD	CTD	13°35.642 N	57°14.754' W	800	Baranowski
M161 93	31 jan 2020 / 15:24-16:01	CTD	CTD	13°53.347 N	57°14.705' W	800	Baranowski
M161 94	31 jan 2020 / 18:30-19:09	CTD	CTD	14°10.915 N	57°14.696' W	800	Baranowski
M161 95	31 jan 2020 / 21:46-22:22	CTD	CTD	14°28.565 N	57°14.733' W	800	Baranowski

4. Instrument Status

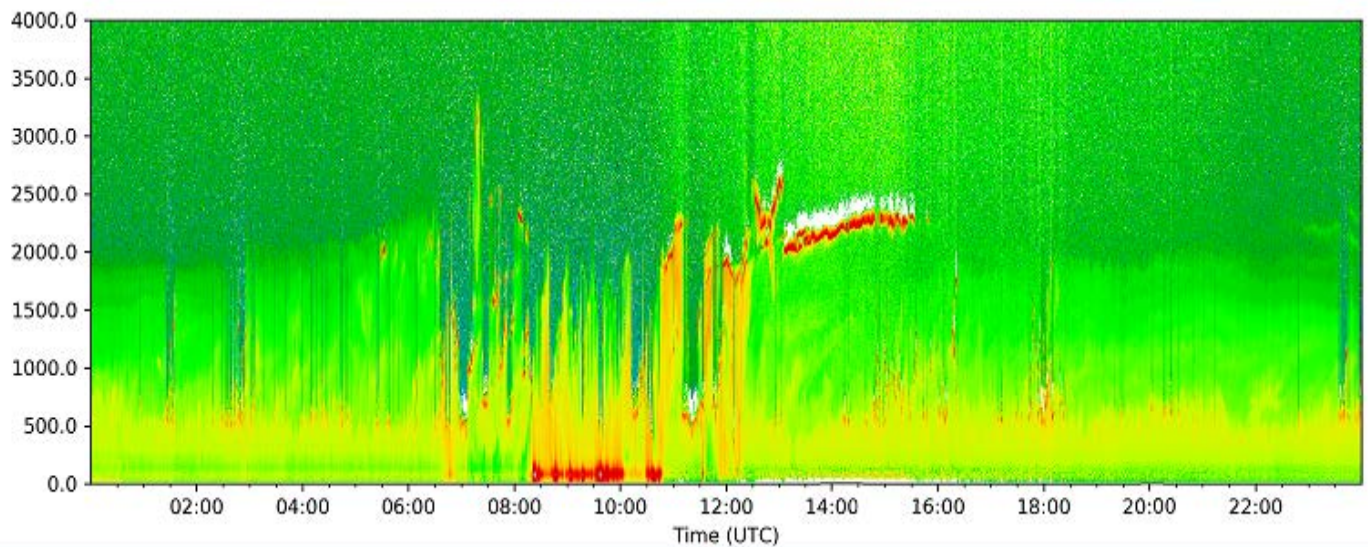
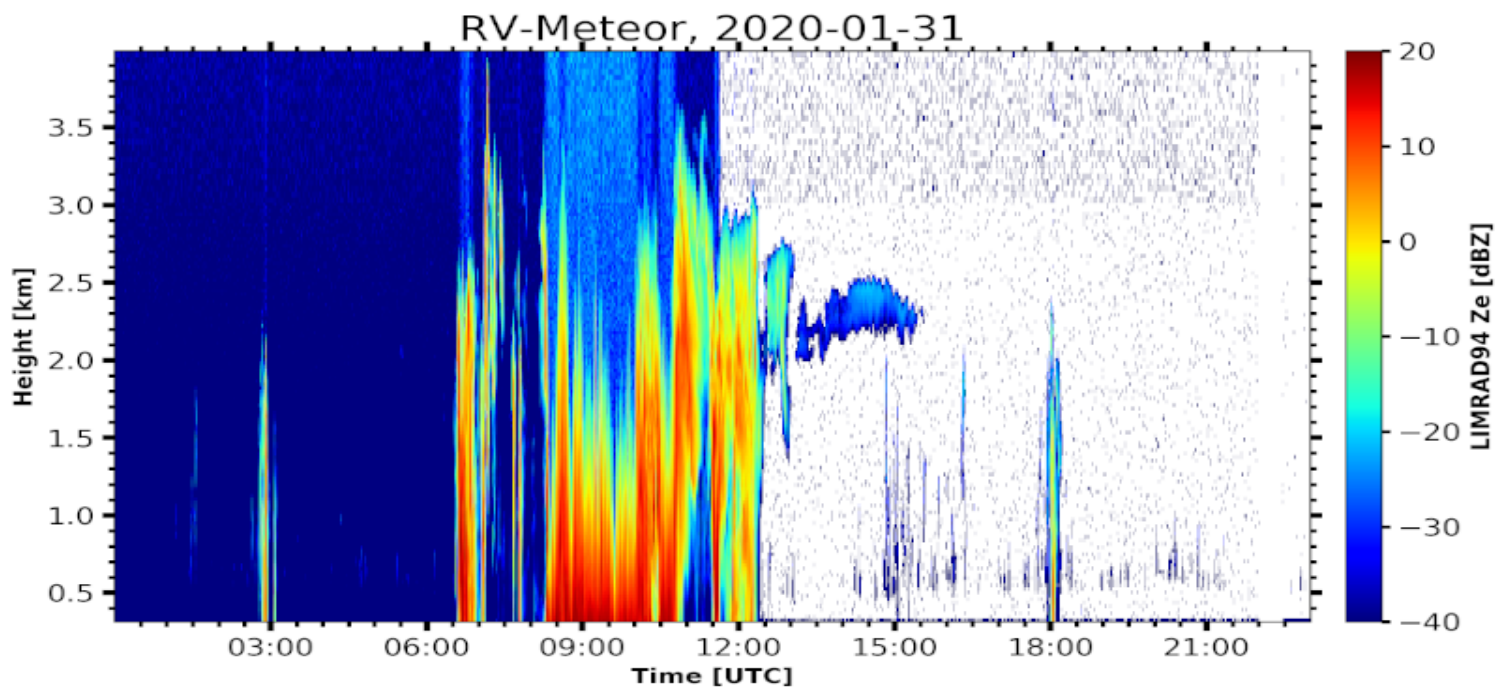
Instrument-Status (**W**-working, **P**-partially-working, **F**-failure, **U**-untested, **R**-ready)

	status	operators
radiosondes	W	Katharina, Imke, Yanmichel, Almuth, Kevin, Sebastian, Geiske
cloud-radar	P	Heike, Johannes
micro-radiometer	W	Heike, Johannes
spect-radiometer	W	Heike, Johannes
Raman-lidar	W	Ludwig
cloud-kite	W	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)	F	Geiske, Kevin
MAX-DOAS	W	Alma
ceilometer	W	Stefan

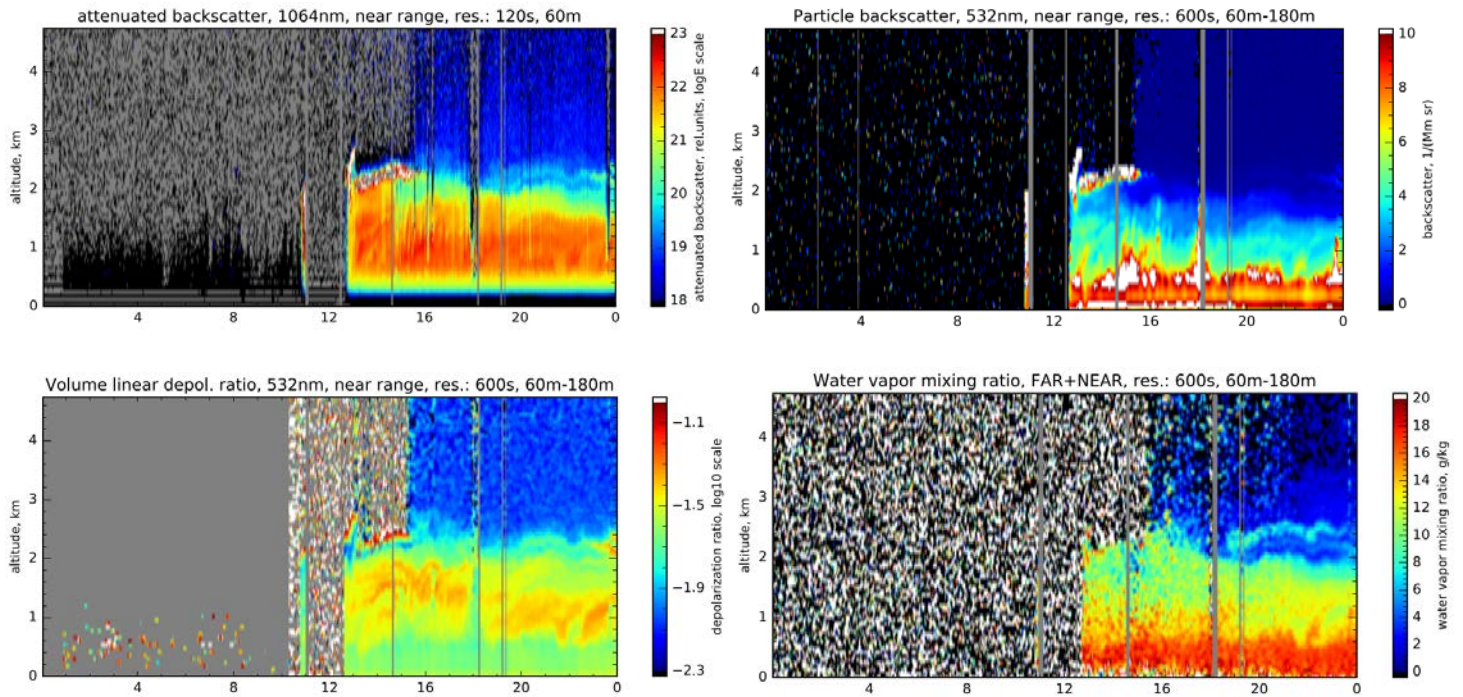
cloud camera			W	Stefan
sunphotometer			W	Stefan, Przemek, Andreas, John, Sanola
aero scat/abs			W	Przemek (Mr P)
WRAS (aero size)			W	Alma
CTD			W	Darek and friends (almost all)
Rodney			W	Darek and his helpers

5. Outlook

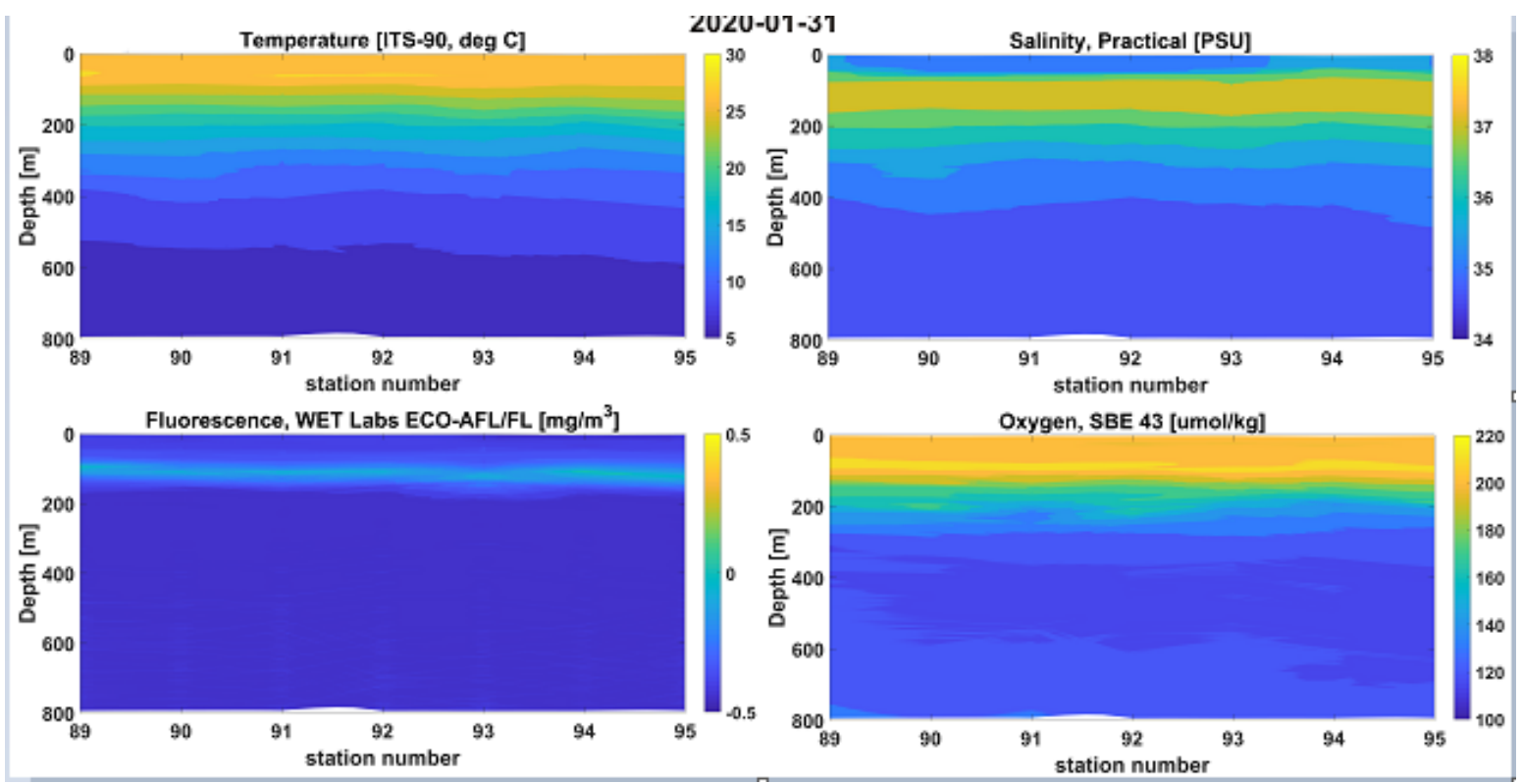
Early next morning we will circle the glider area with CTD profile and then head south towards L2. Just northerly of L2 we plan a late evening (20LT) easterly (west to east) track into the wind for the cloud-kite instrument.



METEOR radar image (top) and ceilometer image (bottom) for Jan 31



Raman lidar images for Jan 31 on the Meteor: backscatter at 1.064um (upper left), backscatter at 0.532um,(upper right), volume depolarization (lower left) and water vapor mixing ratio (lower right)



Profiles for temperature, salinity, fluorecence and oxygen for today's CTD casts (near L1)