

Meteor 018 (2020)

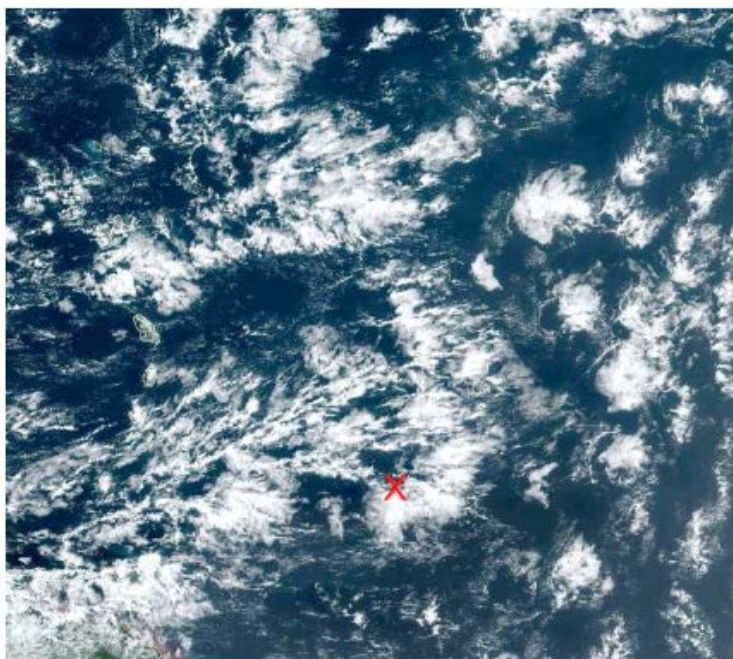
Stefan Kinne (19 feb 2am)

1. Objective

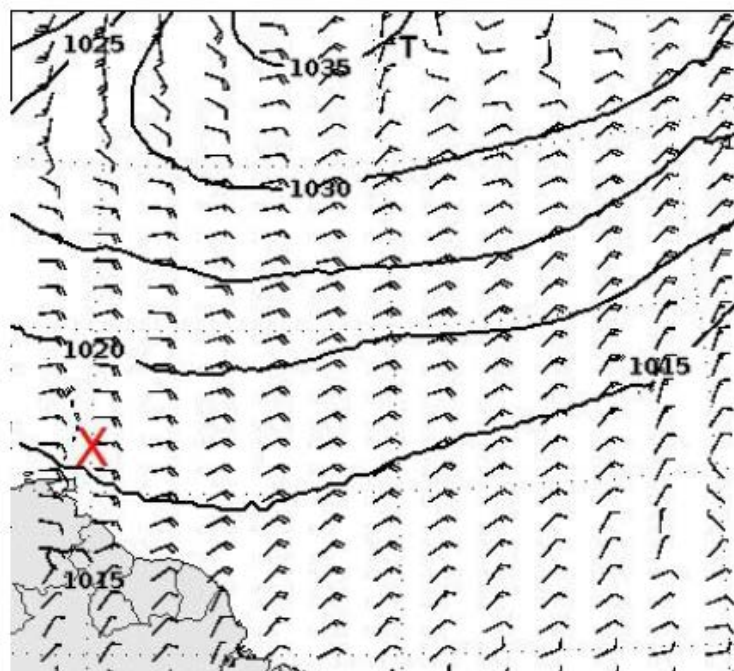
Collecting regular CTD casts every 3 hours on the way northward to the center position of the METEOR track. Approaching the BCO site in wind-direction (E) from ca 250km out.

Overnight we had reached the southern point of the METEOR track and headed north with regular CTD casts to the center of the METEOR track (at 13.3N), which was reached in the evening. This ended our regular CTD casts with about 220 CTDs in total. These are actually more than the 200 radiosonde launches, including those of the DWD. For tomorrow morning at the BCO site we plan another radiosonde launch during our brief 1 hour stay 1 mile off the BCO site. During the day cloud cover increased from low to mid-level clouds with occasional showers. On our path away from the METEOR track (which was started at 21.30UTC) to BCO, we moved with the clouds and the occasional precipitation so we should have great radar images (we could not quite stay with the cloud system as our speed was only about half of the windspeed).

2. Synoptic Situation



Satellitenbild GOES16 18.02.2020 13:20 UTC



Vorhersage für Mittwoch 12 UTC

Weather observations (every 3hr)

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20 02 18001 99130 70572 16/// /0710 10265 20221 40155 53013 7///// 8///// 22242 04272
2///// 3///// 4///// 5///// 6///// ICE /////
 20 02 18031 99127 70572 46/// /0711 10262 20220 40158 50003 7///// 8///// 22242 04271
2///// 3///// 4///// 5///// 6///// ICE /////

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20 02 18061 99124 70572 16/// /0912 10261 20220 40144 57014 7///// 8///// 22242 04270
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 18091 99122 70572 46/// /0811 10262 20218 40143 55001 7///// 8///// 22241 04272
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 18121 99125 70572 11497 70913 10259 20218 40163 52020 78082 878// 22202 04269
20302 307/// 40804 5///// 6///// ICE /////
20 02 18151 99127 70572 41497 70911 10259 20220 40170 50007 70282 8683/ 22201 04270
20302 308// 40804 5///// 6///// ICE /////
20 02 18181 99130 70572 11497 70911 10265 20215 40147 58023 72582 878// 22202 04270
20301 308// 40805 5///// 6///// ICE /////
20 02 18211 99133 70572 41597 80710 10263 20210 40149 53002 70282 888// 22281 04271
20302 309// 40805 5///// 6///// ICE /////

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A few blue sky breaks in the morning - otherwise broken clouds at low and mid levels. Many small convective systems caused precipitation. Strong winds (ca 12m/s) and elevated aerosol by seasalt and advected dust.

3. Cruise-day Elements

IWV (integrated water vapor): 41 kg /m2 +/- 2
LWP (liquid water path): 226 g /m2 +/- 851

Time	0-3UTC	4-6UTC	7-9UTC	10-12UTC	13-15UTC	16-18UTC	19-21UTC
Height_m	1185.03	514.26	491.90	491.90	1050.88	1185.03	1185.03
max_hydro_frac_low	0.40	0.28	0.09	0.32	0.19	0.56	0.52
Height_m	2302.99	1296.83	2437.14	1207.39	1654.57	1721.65	2124.11
max_hydro_frac_mid	0.54	0.24	0.19	0.15	0.23	0.76	0.92
Height_m	12878.56	12836.47	12920.65	12878.56	12836.47	6100.39	5987.42
max_hydro_frac_high	0.00	0.00	0.00	0.00	0.00	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	Tdew	Tair	Twater	TrueDir	RH	rel.Wind	trueWind	lw Rad	sw Rad	lat	lon
PSU	°C	°C	°C	deg	%	m/s	m/s	W/m ²	W/m ²	°N	°E
35.9245	21.74	26.48	27.2	76.53	74.82	11.07	10.75	441.05	-0.57	12.96	-57.24
35.8803	21.94	26.47	27.11	77.25	75.78	11.53	11.06	430.05	-1	12.81	-57.25
35.8626	21.99	26.37	27.1	70.58	76.42	11.22	10.91	410.85	-1	12.71	-57.24
35.8813	22.18	26.24	27.1	74.43	78.02	11.98	11.92	405.32	-1	12.62	-57.24
35.8802	22.32	26.2	27.02	79.42	78.82	12.38	11.83	430.7	-0.72	12.47	-57.25
35.8616	22.05	26.19	27.01	80.35	77.57	12.49	11.88	435.62	-0.33	12.42	-57.24
35.9283	21.9	26.1	27.08	84.63	77.33	12.63	11.64	415.23	-0.8	12.32	-57.24
36.1376	21.93	26.12	27.27	81.18	77.38	11.89	11.21	429.7	-1	12.17	-57.24
36.1555	22.05	26.13	27.3	77.65	77.77	12.21	11.17	424.33	-0.98	12.14	-57.24
36.036	22.29	25.94	27.17	92.18	80.02	12.27	11.01	429.17	-0.43	12.26	-57.25
35.9247	22.41	26.08	27.05	85.05	79.85	11.38	10.39	411.93	38.1	12.39	-57.25
35.8907	22.31	25.84	26.97	87.92	80.47	13.2	12.54	422.45	189.32	12.44	-57.24

35.922	22.16	25.51	27.02	100.05	81.43	13.34	12.87	404.3	414.92	12.57	-57.25
35.9144	22.06	25.63	27.04	100.07	80.23	11.73	11.39	422.67	525.98	12.69	-57.25
35.9054	21.62	25.89	27.06	92.78	76.93	11.88	11.47	424.73	716.62	12.71	-57.25
35.9206	21.78	25.52	27	92.73	79.55	11.87	10.63	426.78	625.72	12.78	-57.24
35.8998	21.8	25.29	26.98	74.82	80.73	12.88	10.62	437.35	592.38	12.95	-57.25
35.886	21.54	26.03	27.08	92.58	75.93	10.39	9.74	440.15	370.5	13.01	-57.24
35.8952	21.45	26.16	27.13	80.33	75.08	11.66	10.48	440.08	463.07	13.08	-57.24
35.9045	21.42	25.94	27.09	68.7	75.95	11.9	10.22	442.72	173.82	13.18	-57.24
35.7653	20.85	26.37	27.12	73.48	71.27	12.22	10.97	441.33	105.75	13.27	-57.25
35.6482	20.83	26.31	27.15	68.9	71.47	8.49	10.76	428.15	39.8	13.3	-57.27
35.6115	21.19	26.2	27.15	71.57	73.55	5.84	11.12	430.38	-0.7	13.29	-57.43
35.5447	21.15	25.99	27.01	69.12	74.41	6.26	11.24	439.03	-1.14	13.28	-57.61

inter-calibration: Merian (close at 19UTC)
CTD stations: 7
radiosondes: 1
overflights: none

station no.	UTC	device	action	latitude	longitude	depth	contact person
M161 230	18 feb 2020 / 02:08-02:40	CTD	CTD	12°42.751 N	57°14.712' W	800	Baranowski
M161 231	18 feb 2020 / 05:02-05:40	CTD	CTD	12°25.154 N	57°14.747' W	800	Baranowski
M161 232	18 feb 2020 / 07:51-08:25	CTD	CTD	12°07.511 N	57°14.731' W	800	Baranowski
M161 233	18 feb 2020 / 10:41-11:15	CTD	CTD	12°25.141 N	57°14.754' W	800	Baranowski
M161 234	18 feb 2020 / 13:41-14:23	CTD	CTD	12°42.752 N	57°14.711' W	800	Baranowski
M161 235	18 feb 2020 / 16:56-17:34	CTD	CTD	13°00.071 N	57°14.706' W	800	Baranowski
M161 236	18 feb 2020 / 20:45-21:19	CTD	CTD	13°18.011 N	57°14.733' W	800	Baranowski

4. Instrument Status

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

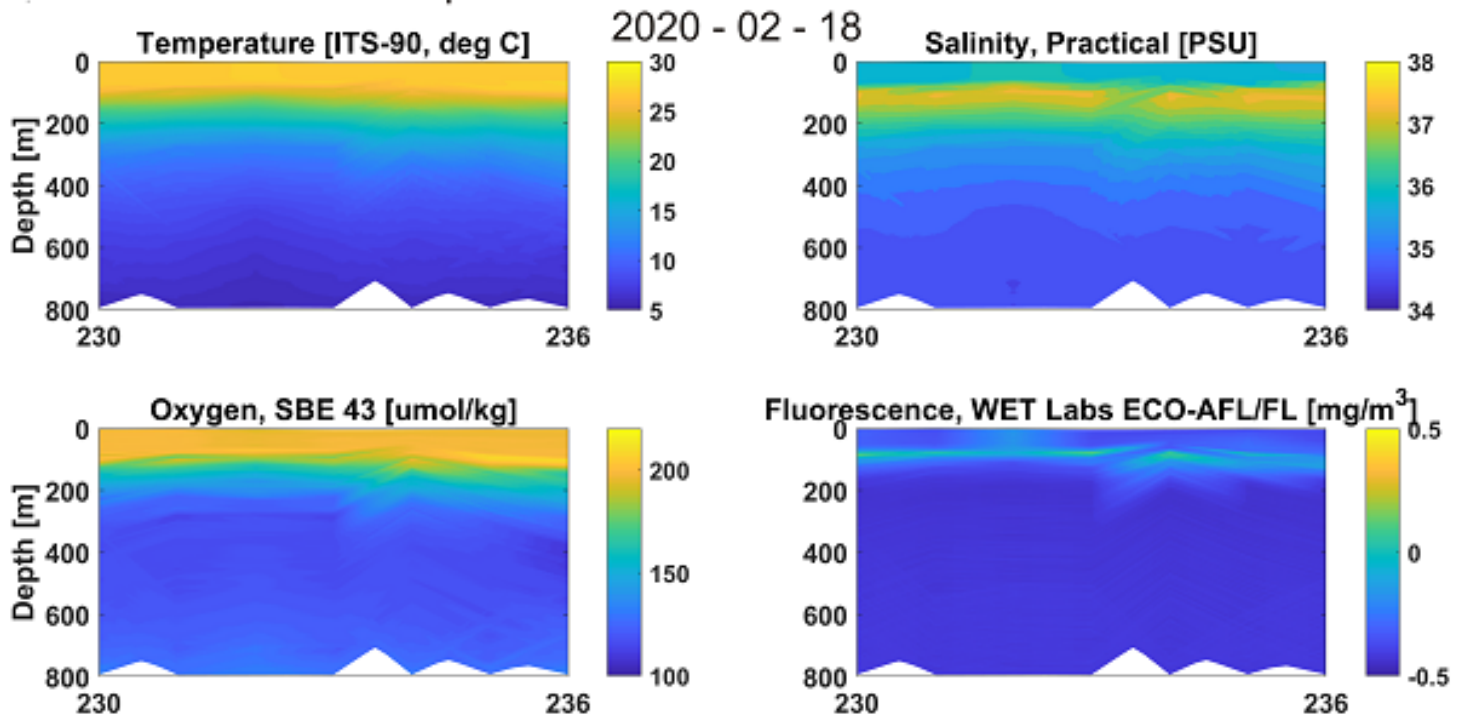
	status	operators
radiosondes	W	Katharina, Imke, Yanmichel, Almuth, Kevin, Sebastian, Geiske
cloud-radar	W	Heike, Johannes
micro-radiometer	W	Heike, Johannes
spect-radiometer	W	Heike, Johannes
Raman-lidar	W	Ludwig
spare cloud-kite	F	Oliver, Marcel, Marcel, Antonio, Robert, Sanola
Picarro	W	Sebastian
micro-biology	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, Przemek, Beth, Callum, Alma, Sanola, Kevin, Robert, Wojtek, Almuth
Rodney		W	Darek, Jakub, Przemek

5. Outlook

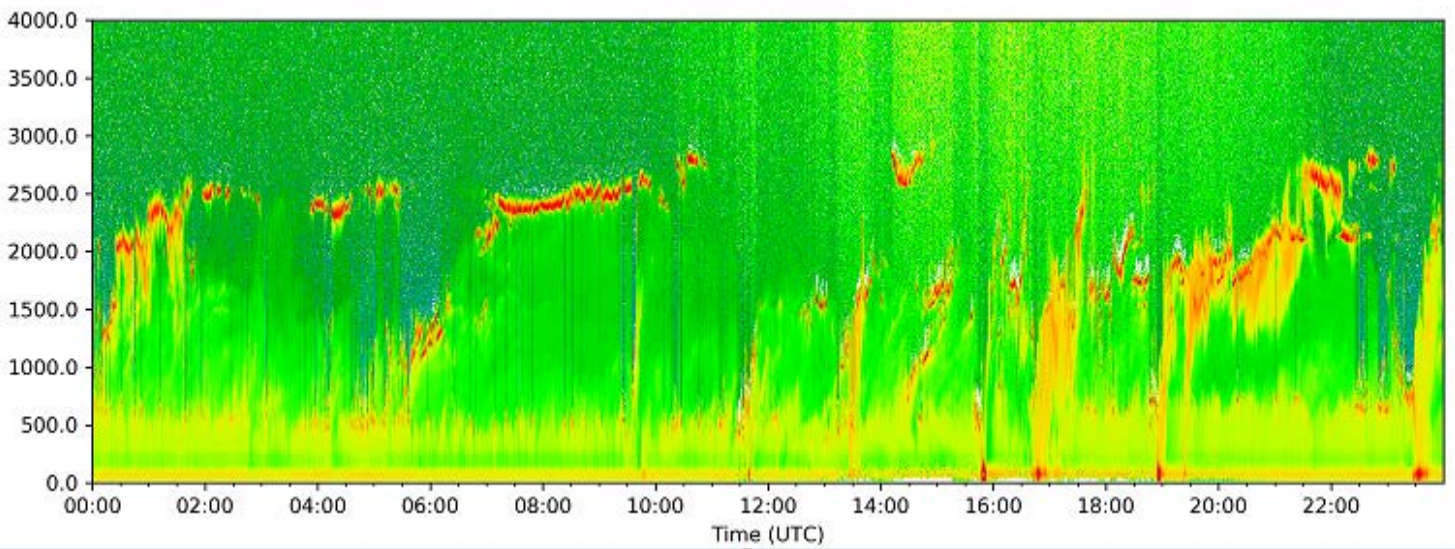
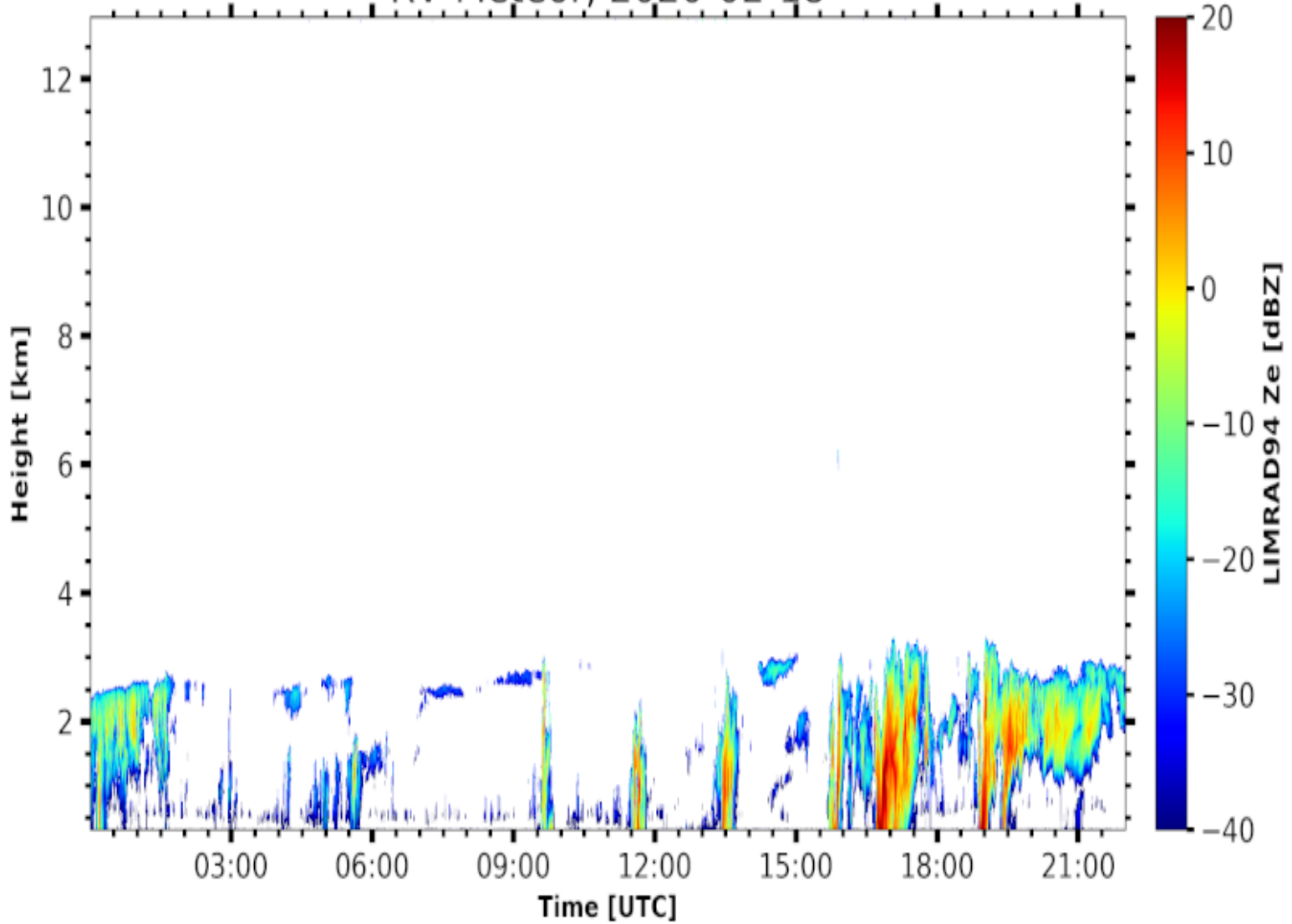
Tomorrow we will reach BCO and we will spend there one hours 1 mile off the coast. Then will continue to quiet island protected waters off Barbados to do needed decks-work and transfer goods with the MERIAN during the afternoon. Then we will head towards the Azores.

CTD profiles for the station from 230 to 236



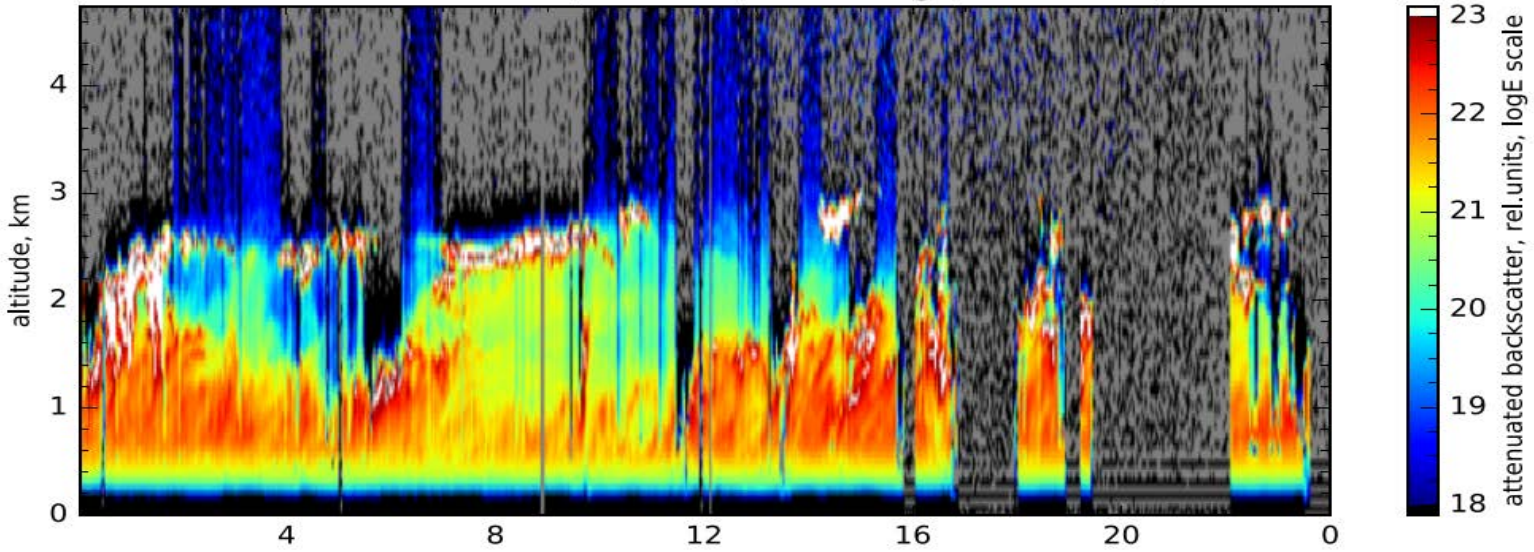
CTD cast data for Feb 18.

RV-Meteor, 2020-02-18

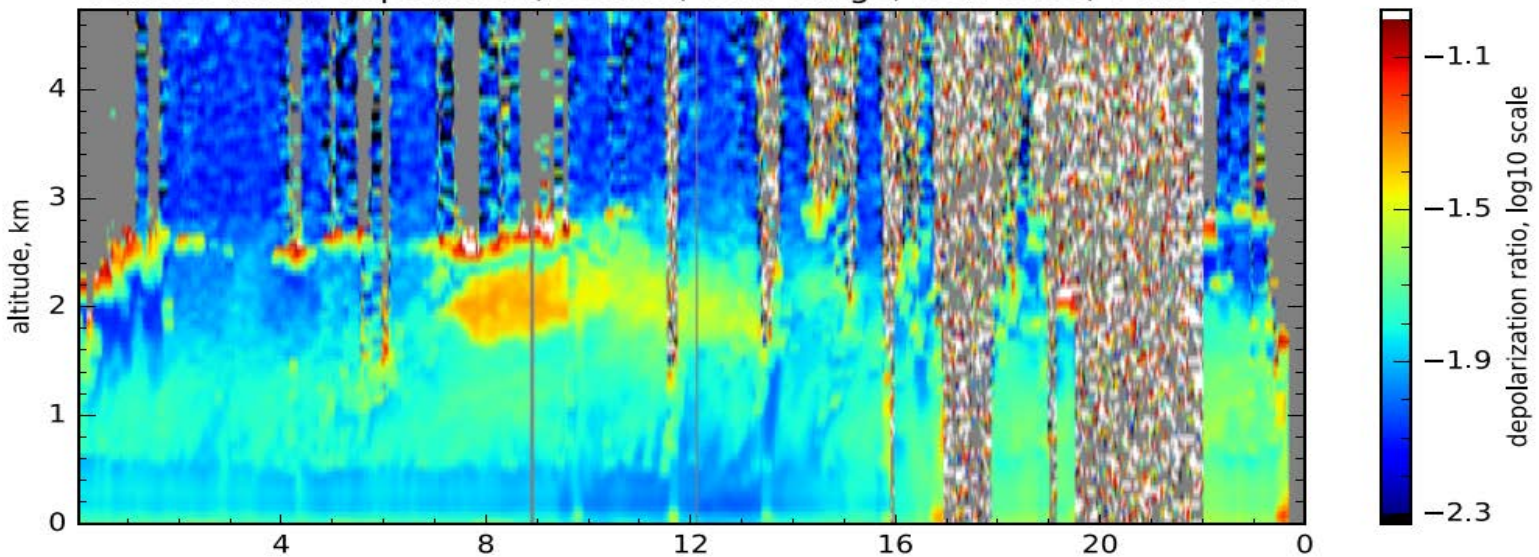


METEOR cloud-radar data f(top) and ceilometer (bottom) of Feb18

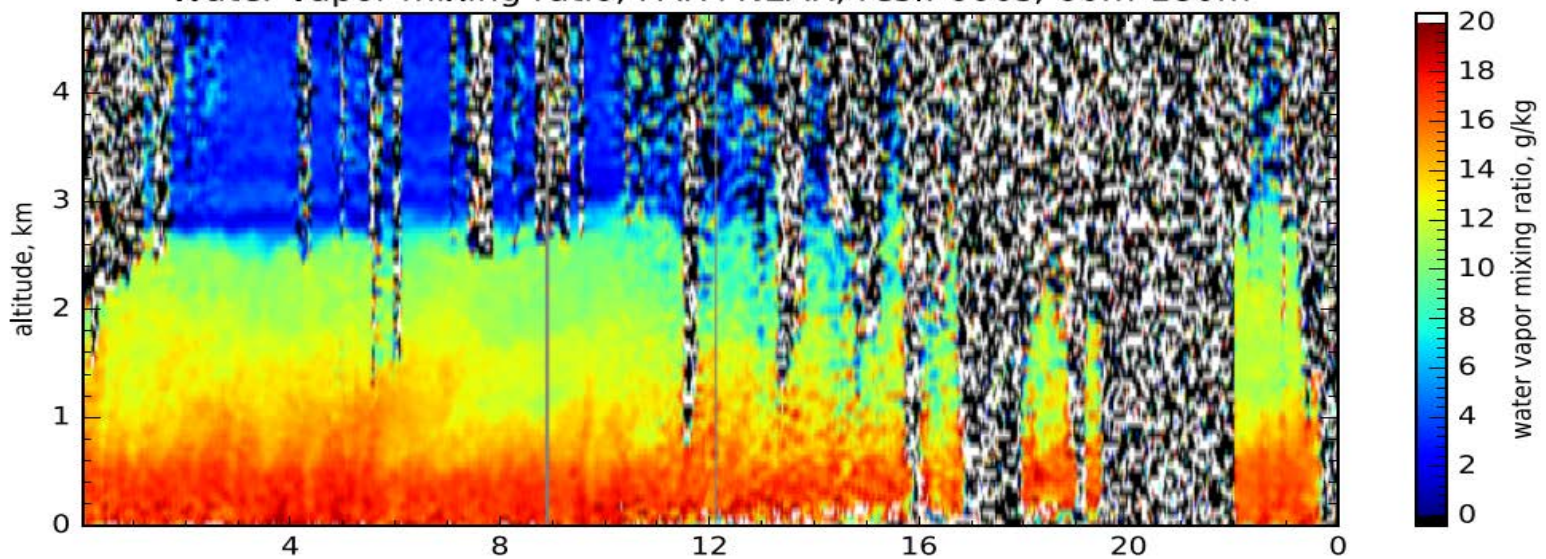
attenuated backscatter, 1064nm, near range, res.: 120s, 60m



Volume linear depol. ratio, 532nm, near range, res.: 600s, 60m-180m



Water vapor mixing ratio, FAR+NEAR, res.: 600s, 60m-180m



Raman-lidar data on Feb 18 (backscatter, depolarization, water vapor)