

Meteor 016 (2020)

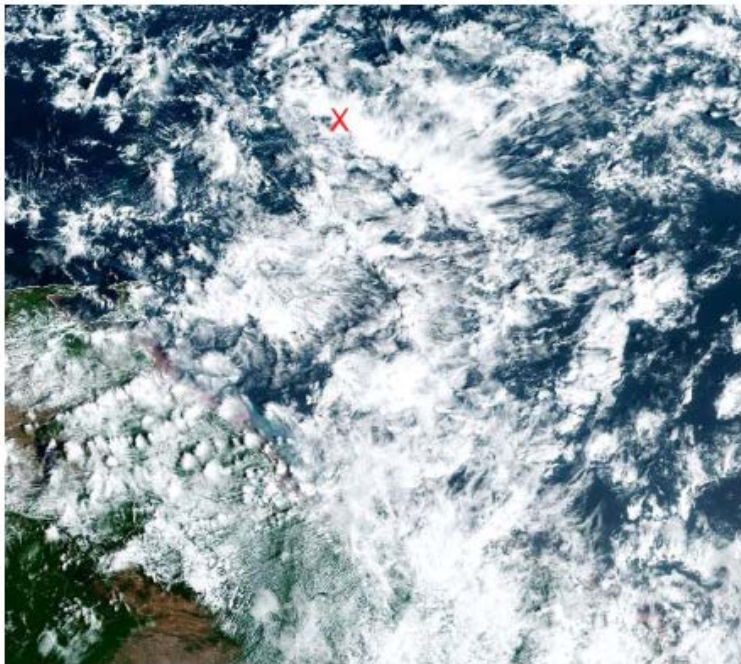
Stefan Kinne (17 feb 2am)

1. Objective

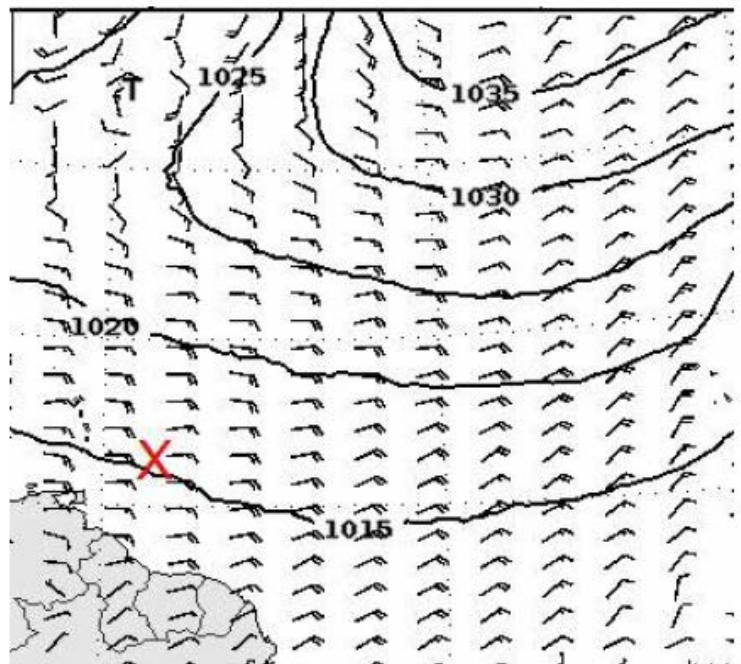
First data with the new mini cloud-kite. Pick-up of two U.E.Anglia gliders. Collecting regional statistics around the larger area around L1 with the regular CTD casts every 3 hours and regular radiosondes launches (at 2.45, 8.45, 14.45, 16.33 (DWD), 18.45, 22.45UTC) – the 6.45 launch and its relaunch both got tangled up in the cloud kite wire and failed Launching the mini cloud-kite with its new mini-instrument.

Overnight our new mini cloud kite was launched to an altitude of about 300m for the entire night. Unfortunately, a bar on the guillotine holding the wire in place got loose, so that the new kite will be down the next days. The raised cloud-kite also caused a failed the 6.45UTC radiosonde launch, as two units (the launch and the re-launch tangled up on the kite wire and) were lost. In the late morning we had reached the glider area near L1 with the autonaut and the two gliders. The autonaut was quickly spotted and soon afterwards the two remaining gliders were fished out of the water even without launching a by-boat. For the rest of the day we surveyed the larger region around L1 crossing from the W to the E of the METEOR region, then to the northern end of the METEOR track and eventually in a southern direction to meet the MERIAN the next day. And the end of the 4 hourly radiosonde launching period was celebrated by the night shift crews.

2. Synoptic Situation



Satellitenbild GOES16 16.02.2020 13:20 UTC



Vorhersage für Montag 12 UTC

Weather observations (every 3hr)

20 02 16001 99128 70572 11598 80911 10264 20211 40156 53017 72582 8227/ 22282 04271
 2//// 3//// 4//// 5//// 6//// ICE ////

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20 02 16031 99131 70572 46/// /0810 10262 20208 40152 58004 7///// 8///// 22202 04270
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 16061 99134 70572 16/// /0610 10258 20202 40140 58012 7///// 8///// 22201 04269
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 16091 99136 70572 46/// /0809 10257 20196 40141 53001 7///// 8///// 22201 04269
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 16121 99139 70572 11598 70812 10262 20191 40156 52015 70222 81278 22202 04268
20201 308// 40804 5///// 6///// ICE /////
20 02 16151 99142 70573 41598 70710 10257 20207 40159 50003 72582 84278 22282 04268
20201 308// 40804 5///// 6///// ICE /////
20 02 16181 99142 70574 11598 80808 10252 20212 40144 58015 72582 83277 22261 04268
20302 308// 40903 5///// 6///// ICE /////
20 02 16211 99142 70572 41598 70909 10257 20204 40143 55001 70182 81271 22221 04268
20302 308// 40804 5///// 6///// ICE /////

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Overcast conditions all day with mid- to high- level clouds. Occasional weak rain and rare sunny period without any completely blue skies... except just before sunset and then later during the night (for star-gazing)

3. Cruise-day Elements

IWV (integrated water vapor): 38 kg /m2 +/- 6
LWP (liquid water path): 170 g /m2 +/- 682

Time	0-3UTC	4-6UTC	7-9UTC	10-12UTC
Height_m	760.21	1117.95	782.57	827.29
max_hydro_frac_low	0.21	0.08	0.05	0.03
Height_m	5949.76	1207.39	5949.76	5949.76
max_hydro_frac_mid	0.26	0.08	0.19	0.43
Height_m	6733.89	8206.92	8838.23	8417.36
max_hydro_frac_high	0.86	0.56	0.75	0.91

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/m ²	sw Rad W/m ²	lat °N	lon °E
35.7556	20.62	26.3	27.11	79.37	70.57	11.66	9.85	419.9	-1	12.89	-57.25
35.6276	20.54	26.24	27.11	73.27	70.42	10.55	9.53	404.78	-1	12.99	-57.25
35.5799	20.58	26.2	27.09	75.25	70.85	11.96	9.93	406.1	-1	13.05	-57.24
35.4749	20.21	26.1	26.92	77.1	69.62	12.7	9.97	395.35	-1	13.22	-57.25
35.4651	20.22	25.91	26.91	69.43	70.47	10.63	9.22	394.72	-1	13.37	-57.25
35.4688	20.24	25.83	26.93	62.82	70.87	10.07	9.75	409.87	-1	13.38	-57.25
35.468	20.02	25.77	26.94	69.43	70.18	10.61	10.29	410.33	-1	13.38	-57.25
35.4693	19.46	25.76	26.89	76.23	67.9	11.99	10.28	392.78	-1	13.42	-57.24
35.5006	19.4	25.77	26.84	79.03	67.57	11.32	9.83	385.82	-1	13.57	-57.25
35.5038	19.5	25.84	26.86	78.62	67.65	11.1	9.63	402.3	-0.98	13.62	-57.24

35.5114	19.75	25.88	26.82	80.78	68.58	12.71	10.3	401.2	23.63	13.79	-57.25
35.3762	19.84	25.97	26.84	81.05	68.62	10.9	10.33	398.7	163.72	13.89	-57.24
35.3651	19.66	26.14	26.86	84.32	67.15	11.02	10.84	412.6	249.53	13.93	-57.25
35.3912	20.85	25.03	26.74	71.2	77.32	14.04	12.7	425.95	222.47	14.08	-57.31
35.3518	21.27	24.9	26.82	71.72	79.88	9.81	9.16	428.33	205.48	14.18	-57.34
35.3542	21.38	25.03	26.79	76.82	79.98	11.67	11.33	435.83	493.1	14.18	-57.34
35.3629	21.27	24.87	26.79	88.85	80.43	9.24	11.16	441.73	286.52	14.19	-57.37
35.3655	20.71	24.94	26.79	81.98	77.08	10.42	9.65	441.17	317.45	14.18	-57.42
35.3605	20.59	25.29	26.77	83.88	74.88	13.21	9.67	429.8	380.3	14.18	-57.34
35.3649	21.12	23.97	26.8	105.6	83.83	10.85	9.53	430.78	215.62	14.18	-57.25
35.3649	20.21	25.57	26.8	89.93	71.85	11.5	9.12	431.17	249.18	14.18	-57.21
35.35	20.66	24.92	26.8	81.17	76.87	13.75	11.04	432.43	82.02	14.18	-57.12
35.3679	21.03	24.69	26.83	76.18	79.68	9.19	8.14	434.27	-0.58	14.18	-57.07
35.3734	20.9	25.39	26.8	80.37	75.88	11.63	8.22	421.27	-0.88	14.18	-56.99

inter-calibration: none
CTD stations: 9
radiosondes: 6
overflights: none

station no.	UTC	device	action	latitude	longitude	depth	contact person
M161 210	16 feb 2020 / 01:31-02:07	CTD	CTD	13°00.047 N	57°14.706' W	800	Baranowski
M161 211	16 feb 2020 / 04:33-05:30	CTD	CTD	13°22.860 N	57°14.718' W	800	Baranowski
M161 212	16 feb 2020 / 06:45-07:14	CTD	samples	13°22.861 N	57°14.719' W	800	Mohr
M161 213	16 feb 2020 / 08:39-09:14	CTD	CTD	13°35.643 N	57°14.717' W	800	Baranowski
M161 214	16 feb 2020 / 11:07-11:42	CTD	CTD	13°53.332 N	57°14.720' W	800	Baranowski
M161 215	16 feb 2020 / 14:21	Glider	recovered	14°11.015 N	57°20.522' W	0	Rollo
M161 216	16 feb 2020 / 14:40	Glider	recovered	14°10.894 N	57°20.841' W	0	Rolloi
M161 217	16 feb 2020 / 14:57-16:04	CTD	CTD	14°10.975 N	57°20.610' W	1000	Baranowski
M161 218	16 feb 2020 / 17:02-17:43	CTD	CTD	14°10.916 N	57°25.237' W	800	Baranowski
M161 219	16 feb 2020 / 19:30-20:05	CTD	CTD	14°10.927 N	57°14.761' W	800	Baranowski
M161 220	16 feb 2020 / 22:10-22:43	CTD	CTD	14°10.942 N	57°04.015' W	800	Baranowski

4. Instrument Status

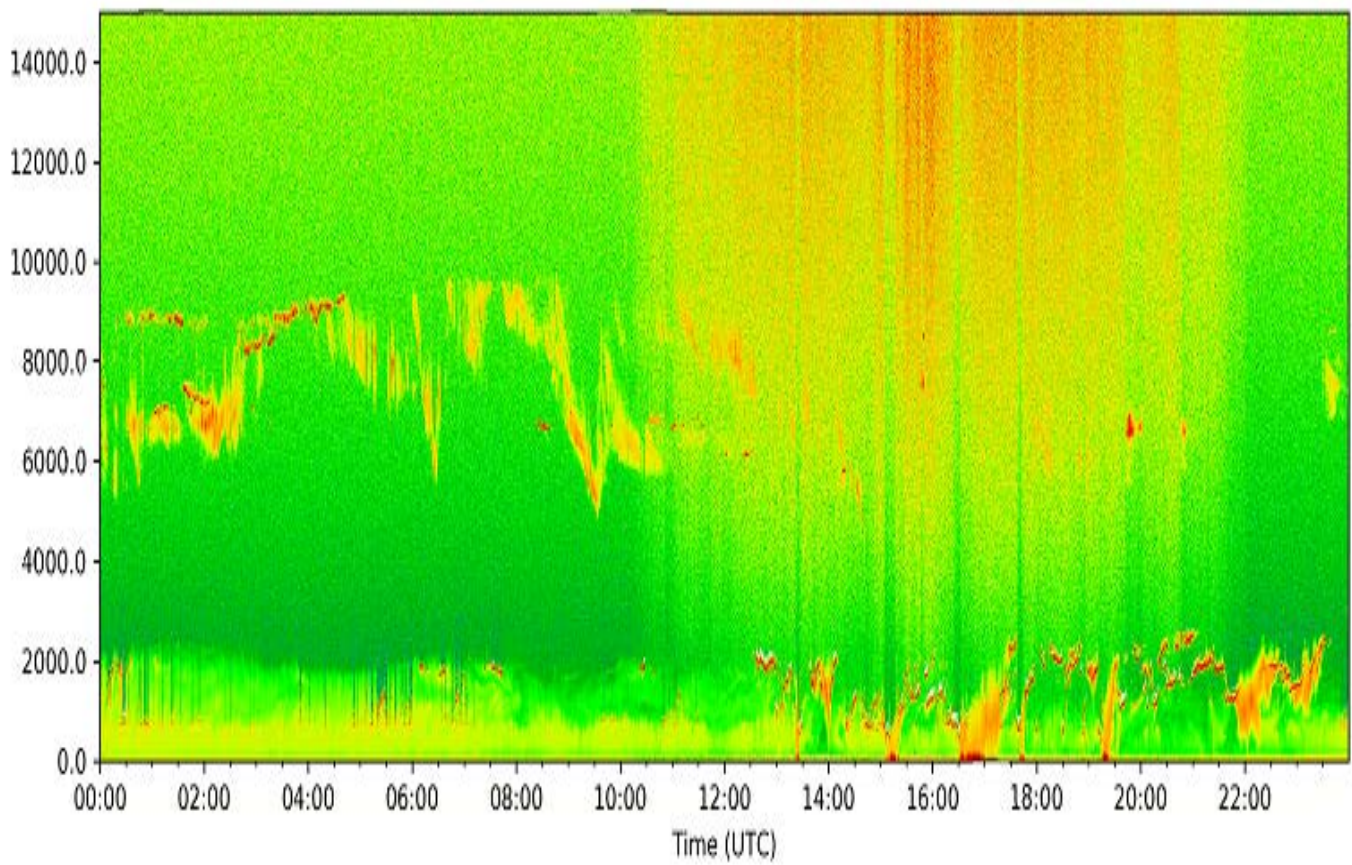
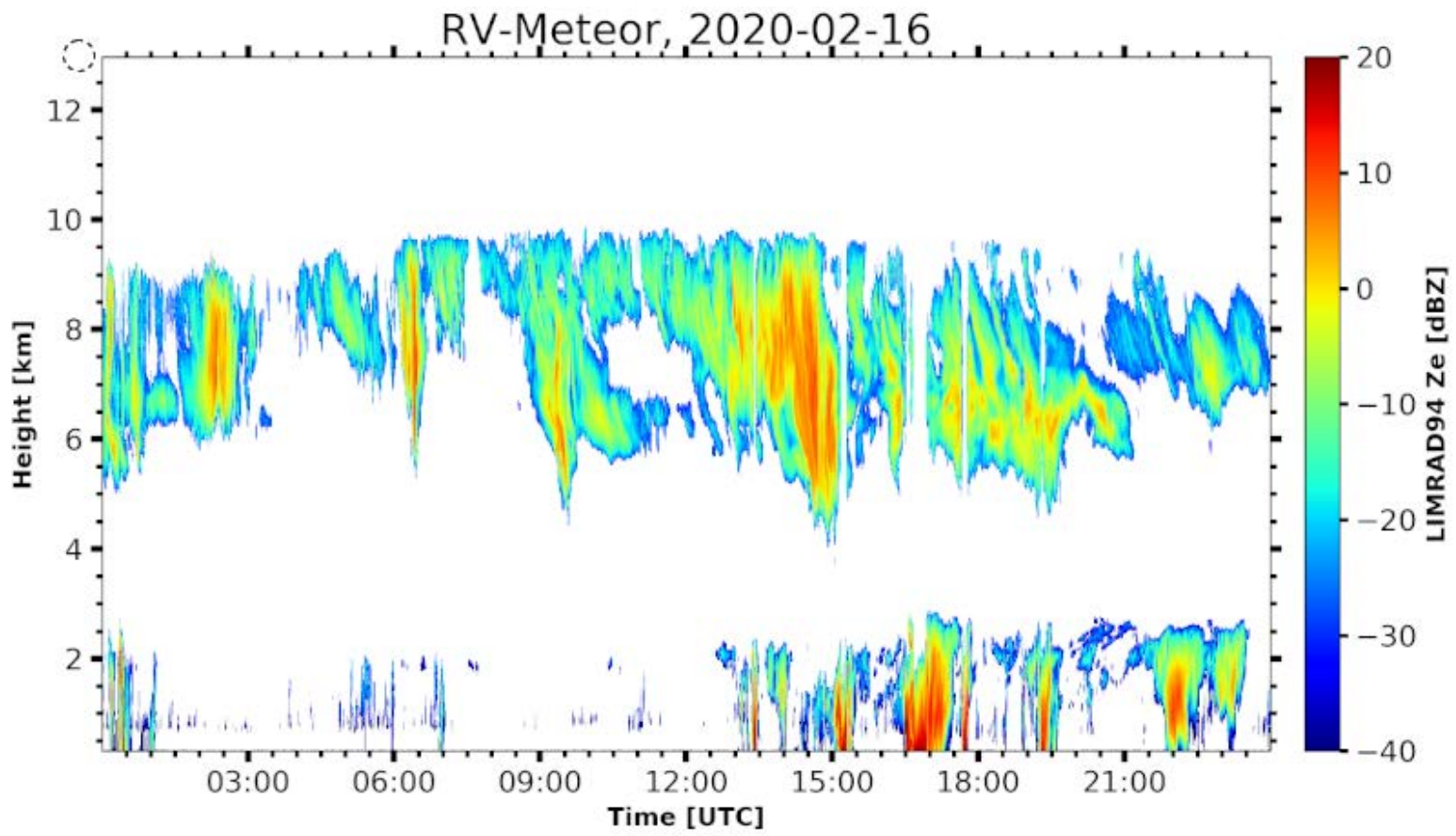
Instrument-Status (**W**-working, **P**-partially-working, **F**-failure, **U**-untested, **R**-ready, **L**-lost)

	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
spare cloud-kite			P	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)			W	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

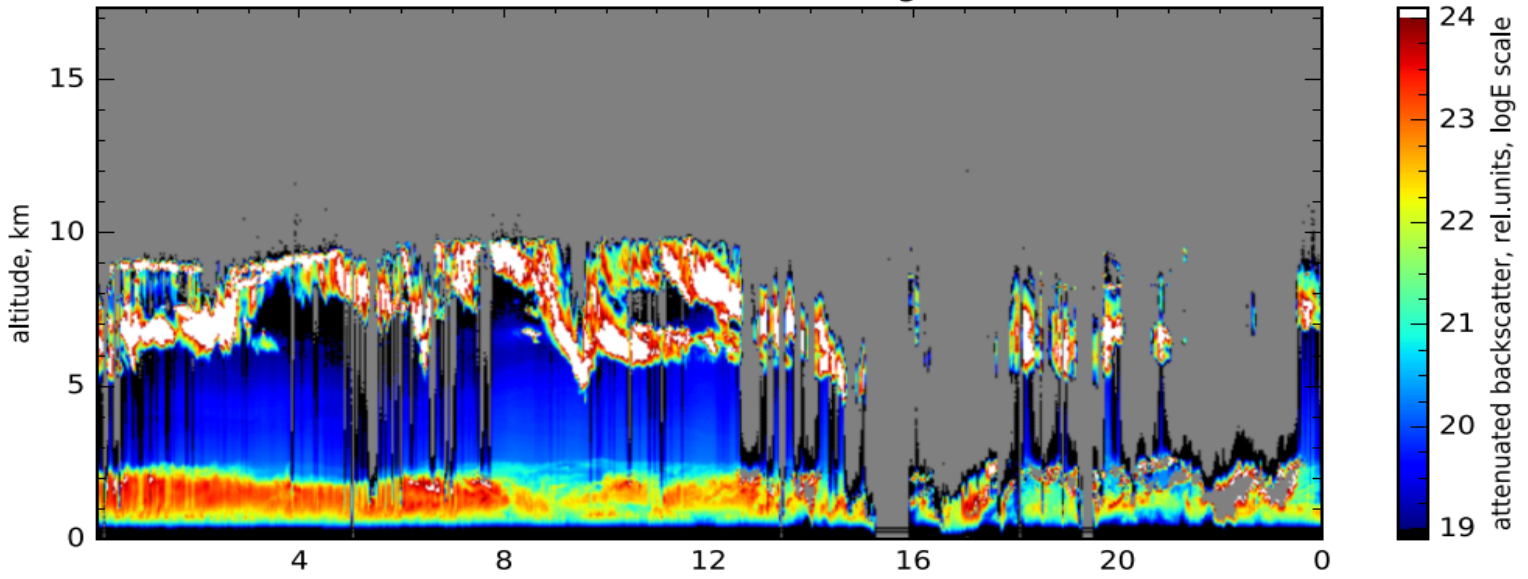
5. Outlook

Tomorrow we will meet the MERIAN for transfer of goods (glider and radiosondes for spare part and frozen samples).

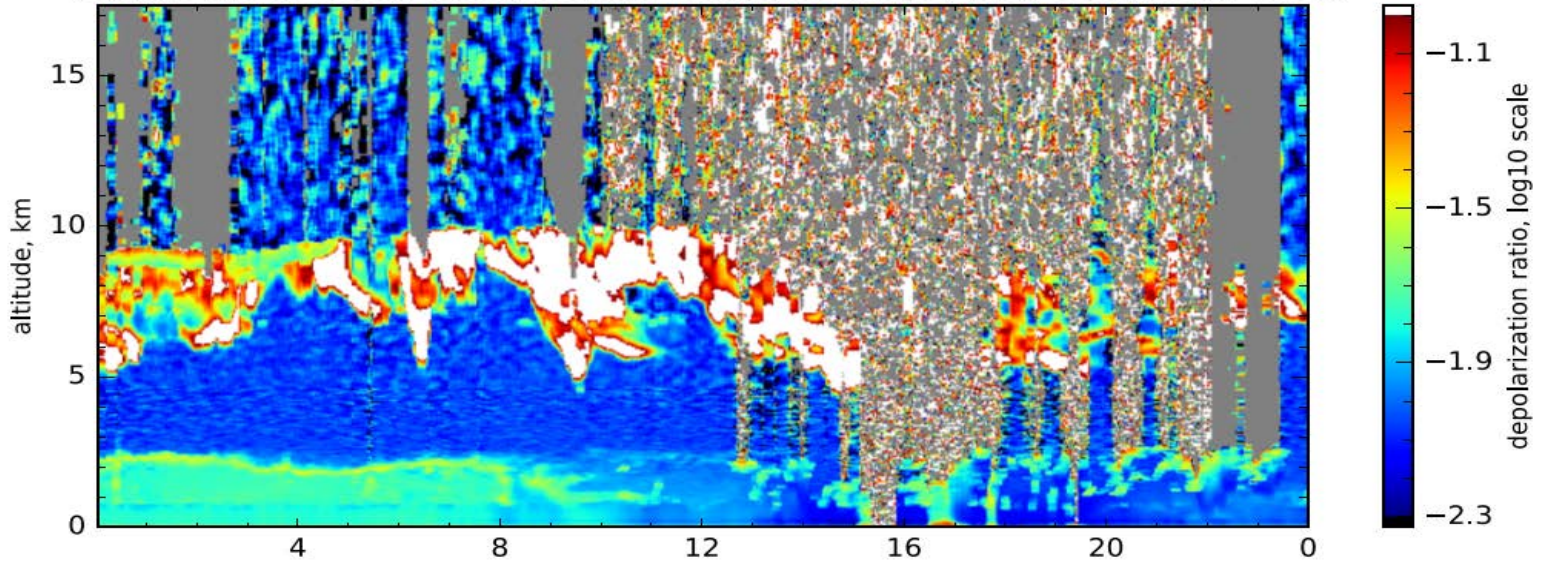


METEOR cloud-radar data f(top) and ceilometer (bottom) or Feb16

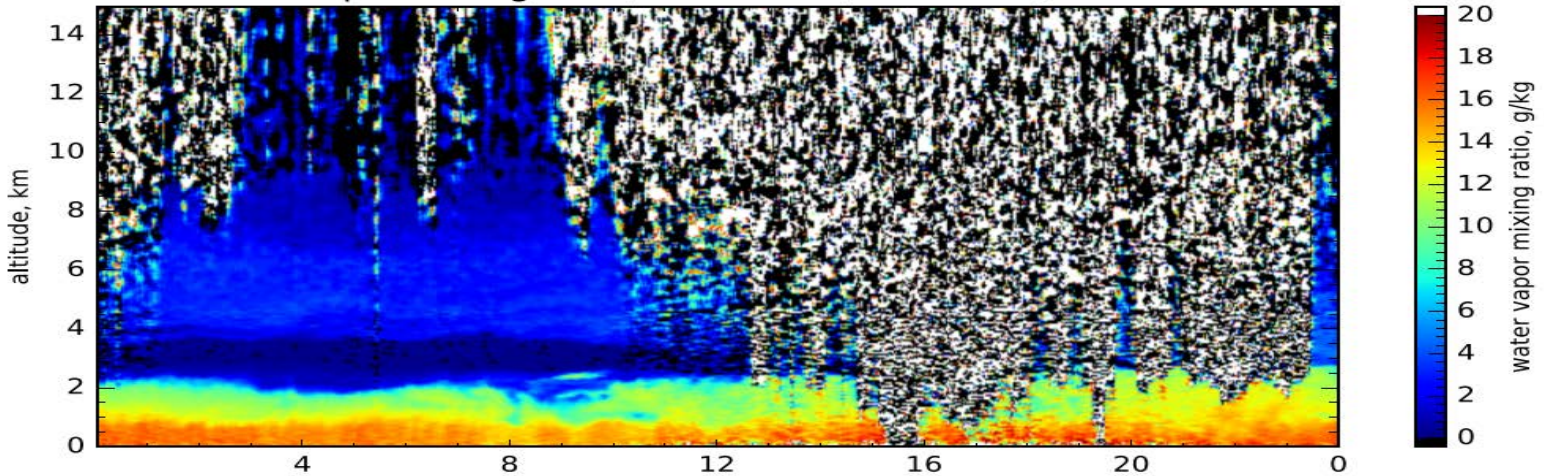
attenuated backscatter, 1064nm, far range, res.: 120s, 60m



Volume linear depol. ratio, 532nm, complete range, res.: 600s, 60m-660m



Water vapor mixing ratio, FAR+NEAR, res.: 600s, 60m-540m



Raman-lidar data on Feb 16 (backscatter, depolarization, water vapor)