

# Meteor 0225 (2020)

Stefan Kinne (26 feb 10am)

## 1. Objective

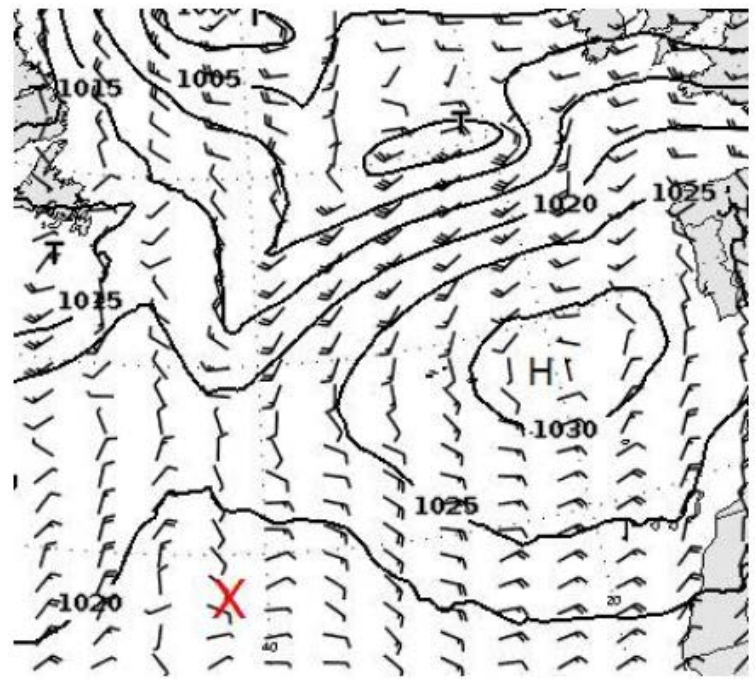
Heading towards the Azores. Three CTD stops and two radiosondes launches at 10.35 and 22.35UTC

Strong winds and swell in the morning with slightly increased atmospheric aerosol (AOD,550nm at 0.25). Winds calmed during the day allowing for 3 CTD stops with parallel UAV flying. Aerosol slowly decreased (to AOD,550nm at 0.20) during the day.

## 2. Synoptic Situation



Satellitenbild GOES16 25.02.2020 12:20 UTC



Vorhersage für Mittwoch 12 UTC

## Weather observations (every 3hr)

```
20 02 25001 99255 70464 16/// /1309 10229 20157 40228 53021 7///// 8///// 22212 04236
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 25031 99258 70460 46/// /1406 10225 20160 40229 50001 7///// 8///// 22212 04226
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 25061 99262 70456 16/// /1208 10218 20169 40216 56013 7///// 8///// 22212 04228
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 25091 99266 70453 46/// /1211 10216 20160 40208 55008 7///// 8///// 22212 04226
2///// 3///// 4///// 5///// 6///// ICE /////
20 02 25121 99270 70449 11598 41209 10214 20159 40225 53017 70300 81205 22212 04225
20201 309// 40803 5///// 6///// ICE /////
20 02 25151 99272 70447 41598 31405 10217 20158 40223 58002 70300 82205 22211 04230
20201 309// 40804 5///// 6///// ICE /////
```

20 02 25181 99275 70445 11598 71402 10215 20152 40203 57020 70311 81236 22212 04230  
 20200 308// 40804 5///// 6///// ICE /////  
 20 02 25211 99278 70442 41997 71002 10212 20152 40198 55005 70322 86089 22212 04225  
 20100 309// 40904 5///// 6///// ICE /////

Some cirrus all day in particular during the evening (sun did not reach the horizon). Fairly dry atmosphere, no rain stinging still just between the dust-low to the east and the front with precipitation to the west.

### 3. Cruise-day Elements

IWV (integrated water vapor): 17 kg /m2 +/- 3  
 LWP (liquid water path): 6 g /m2 +/- 21

Time	0-3UTC	4-6UTC	7-9UTC	10-12UTC	13-15UTC	16-18UTC	19-21UTC	22-24UTC
Height_m	1185.03	1185.03	670.77	715.49	849.65	827.29	335.39	335.39
max_hydro_frac_low	0.10	0.13	0.01	0.03	0.08	0.05	0.00	0.00
Height_m	1989.96	1855.80	1207.39	1207.39	1207.39	1207.39	1207.39	1207.39
max_hydro_frac_mid	0.30	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Height_m	9722.05	10395.44	9806.22	8754.05	8206.92	10311.26	8333.19	8333.19
max_hydro_frac_high	0.06	0.45	0.96	0.31	0.05	0.06	0.03	0.82

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

### hourly means of ship data (1<sup>st</sup> line 0-1 UTC, 2<sup>nd</sup> 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 <sup>2</sup>	W/m <sup>2</sup>	°N	°E
37.4584	15.51	22.79	23.56	134.5	63.07	9.61	8.25	348.92	-1	25.52	-46.34
37.3278	16.03	22.51	23.08	132.88	66.45	8.62	7	386.83	-0.93	25.65	-46.21
37.2757	16.16	22.55	22.95	138.28	66.77	8.02	6.66	373.73	-1	25.78	-46.09
37.1153	16.47	22.3	22.61	127.57	69.18	7.99	5.67	370.4	-1	25.92	-45.96
37.1309	16.84	22.06	22.62	124.63	71.8	8.38	5.93	374.2	-1	26.05	-45.83
37.1976	16.48	21.96	22.74	125.36	70.69	9.24	7.13	357.15	-1	26.18	-45.71
37.1346	16.6	21.76	22.64	116.53	72.03	11.35	8.82	359.9	-1	26.31	-45.58
37.2231	16.51	21.69	22.75	118.17	71.98	12.18	9.83	357.65	-1	26.44	-45.46
37.1735	16.16	21.58	22.67	121.23	70.75	12.53	10.6	360.67	-1	26.56	-45.34
37.1332	16.11	21.5	22.63	118.22	71	12.3	9.92	361.08	14.6	26.69	-45.22
37.124	16.27	21.39	22.57	115	72.17	12.21	9.76	350.82	133.78	26.81	-45.11
37.1065	16.11	21.48	22.51	117.42	71.07	11.46	8.9	351.53	381.97	26.93	-44.99
37.0924	15.64	21.52	22.53	122.98	68.77	10.42	8.15	351.73	582.5	27.06	-44.87
37.0976	15.48	21.51	22.6	125.52	68.02	7.32	7	348.67	722.58	27.11	-44.81
37.1288	15.72	21.63	22.72	130.88	68.7	7.41	6	352.67	866.52	27.14	-44.78
37.2125	15.42	21.77	22.87	143.53	66.8	5.97	3.95	352.62	828.87	27.26	-44.67
37.1837	15.21	21.6	22.83	150.53	66.52	5.05	3.59	338.63	789.35	27.39	-44.55
37.1942	15.17	21.7	22.8	157.43	65.93	3.81	2.6	338.02	673.65	27.45	-44.49
37.1609	15.16	21.71	22.79	129.98	65.86	5.88	2.57	333.43	486.1	27.55	-44.38

37.1142	15.29	21.59	22.59	112.16	67.02	6.55	3.5	335.4	282.98	27.68	-44.26
37.1008	15.17	21.26	22.39	112.02	67.87	4.36	2.43	332.75	39.83	27.73	-44.2
37.1427	15.24	20.96	22.52	99.6	69.35	8.05	3.77	331.35	-1	27.85	-44.1
36.9656	15.44	20.79	21.92	99.88	71.1	8.72	4.67	343.42	-1	27.98	-43.97
36.971	15.81	20.79	21.83	96.69	72.71	8.75	4.63	354	-1	28.11	-43.85

inter-calibration: none  
 CTD stations: 3  
 radiosondes: 2  
 overflights: none

station no.	date / time UTC	device	action	latitude [°N]	longitude [°W]
M161 246	25 feb 2020 / 13:04-13:52	CTD	1000m	27°06.681 N	44°48.634' W
M161 247	25 feb 2020 / 16:58-17:24	CTD	500m	27°26.053 N	44°29.989' W
M161 248	25 feb 2020 / 19:56-20:19	CTD	500m	27°43.338 N	44°13.007' W

#### 4. Instrument Status

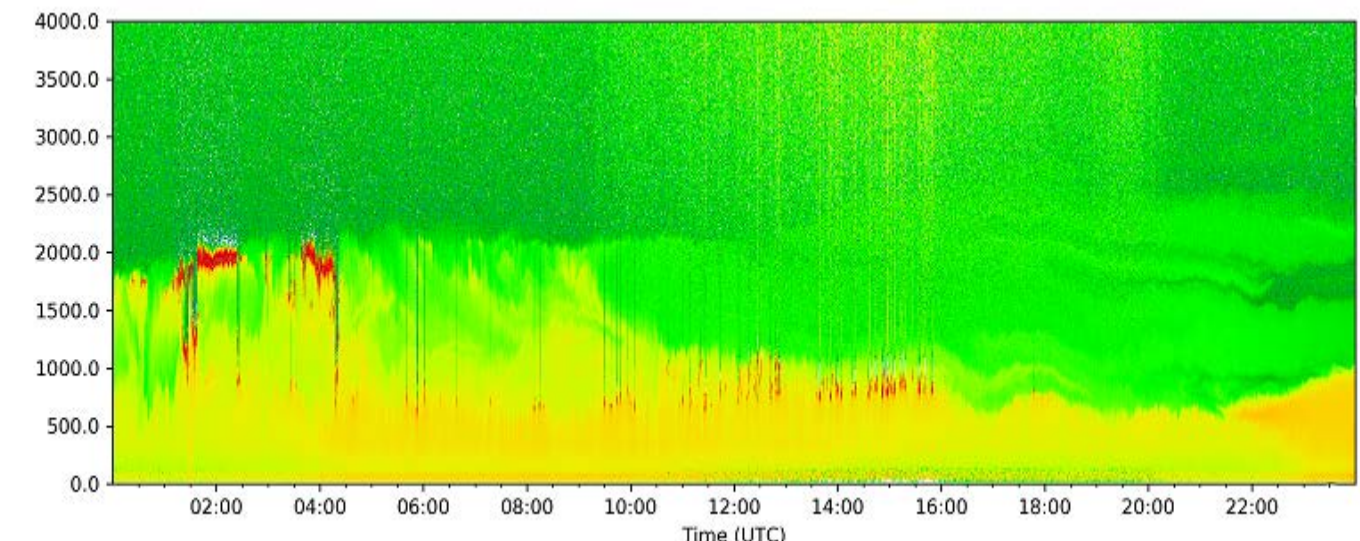
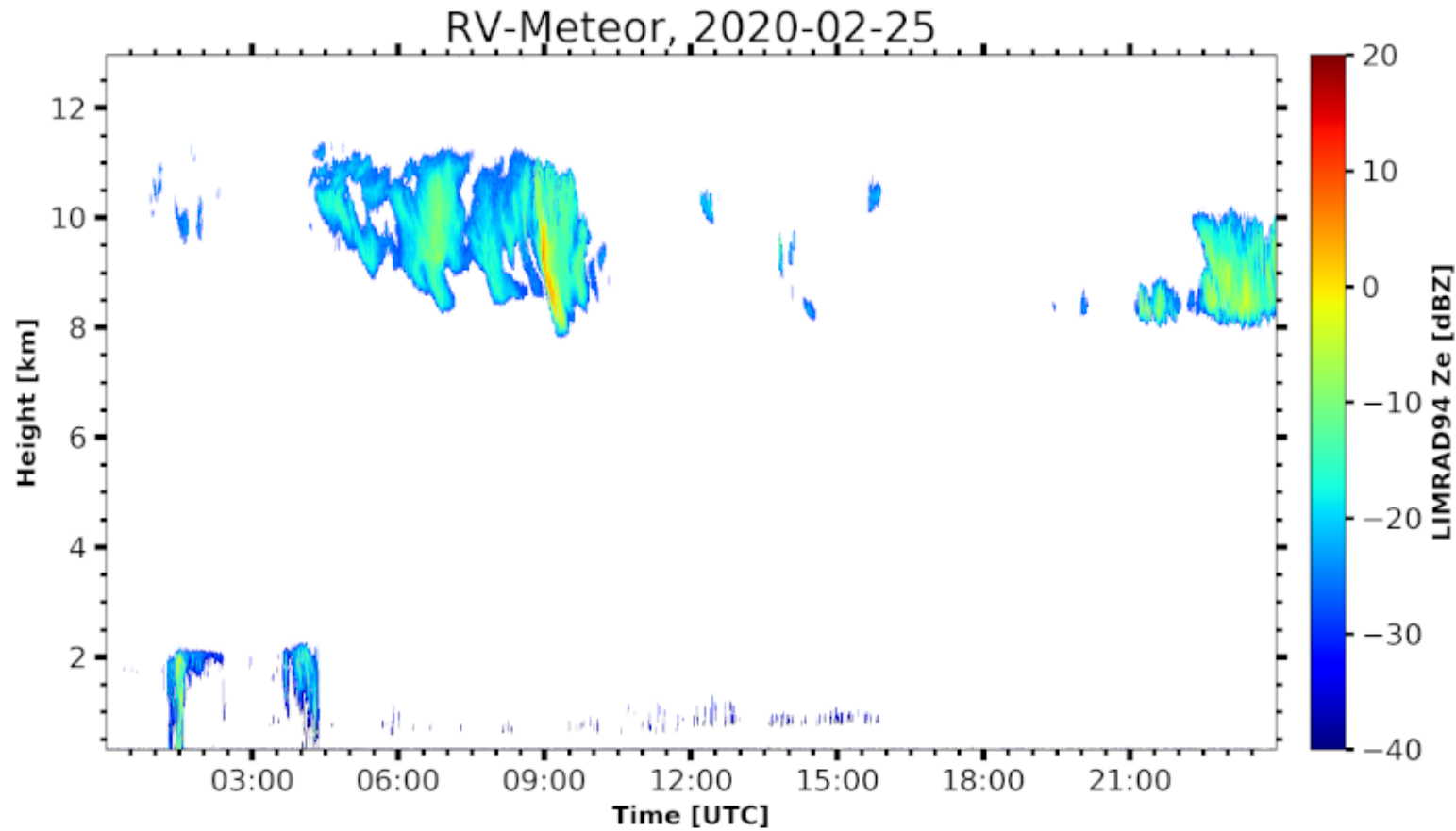
Instrument-Status (**W**-working, **P**-partially-working, **F**-failure, **U**-untested, **R**-ready, **L**-lost, **S**-stopped)

			status	operators
radiosondes			<b>W</b>	Katharina, Imke, Yanmichel, Almuth, Kevin, Sebastian, Geiske
cloud-radar			<b>W</b>	Heike, Johannes
micro-radiometer			<b>W</b>	Heike, Johannes
spect-radiometer			<b>W</b>	Heike, Johannes
Raman-lidar			<b>W</b>	Ludwig
spare cloud-kite			<b>S</b>	Oliver, Marcel, Marcel, Antonio, Robert, Sanola
Picarro			<b>W</b>	Sebastian
micro-biology			<b>W</b>	Wiebke, Jan, Abiel
ADPC ocean curr.			<b>W</b>	Callum, Beth
thermosalinograph			<b>W</b>	Callum, Beth
glider			<b>S</b>	Callum, Beth
UAV			<b>W</b>	Darek, Jakub, Michal, Wojciech
eddy-flux-data			<b>W/S</b>	Katharina, Imke, Heike
wind-lidar (DTU)			<b>W</b>	Geiske, Kevin
wind-lidar (Bre)			<b>W</b>	Geiske, Kevin
MAX-DOAS			<b>W</b>	Alma
ceilometer			<b>W</b>	Stefan
cloud camera			<b>W</b>	Stefan
sunphotometer			<b>W</b>	Stefan, Przemek, Andreas, John, Sanola
aero scat/abs			<b>W</b>	Przemek (Mr P)

WRAS (aero size)		<b>W</b>	Alma
CTD		<b>W</b>	Darek, Przemek, Beth, Callum, Alma, Sanola, Kevin, Robert, Wojtek, Almuth
Rodney		<b>S</b>	Darek, Jakub, Przemek

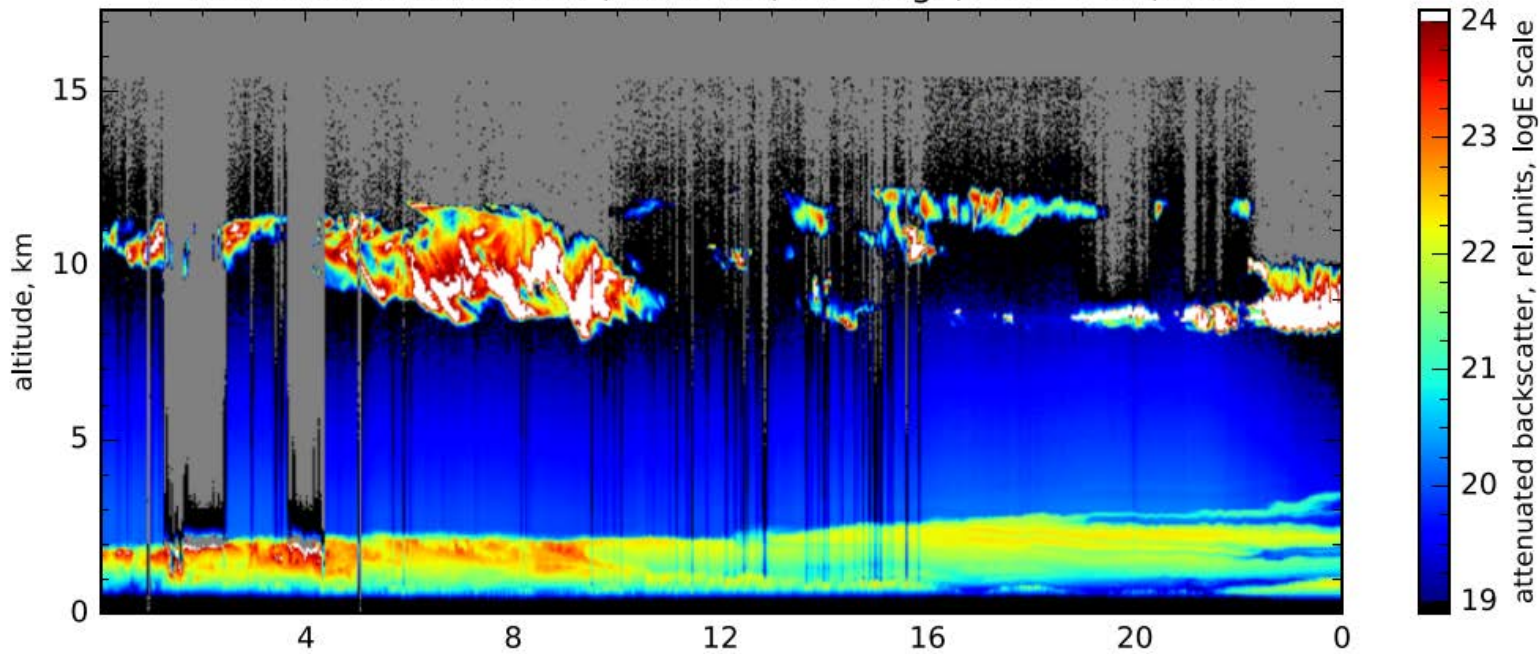
### 5. Outlook

Tomorrow will reach the third ARGO float deployment and then we likely proceed into the major dust plume low

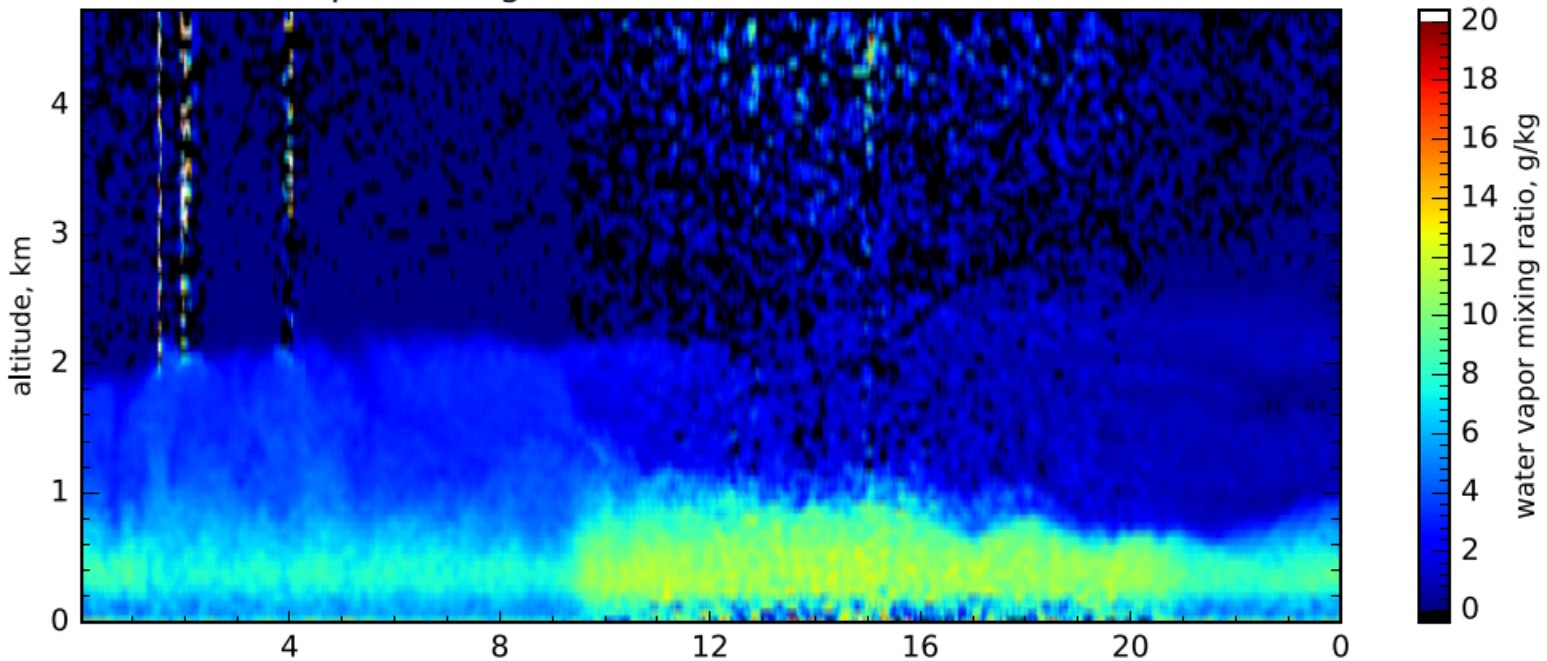


METEOR radar (top) and ceilometer (bottom) on Feb 25

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

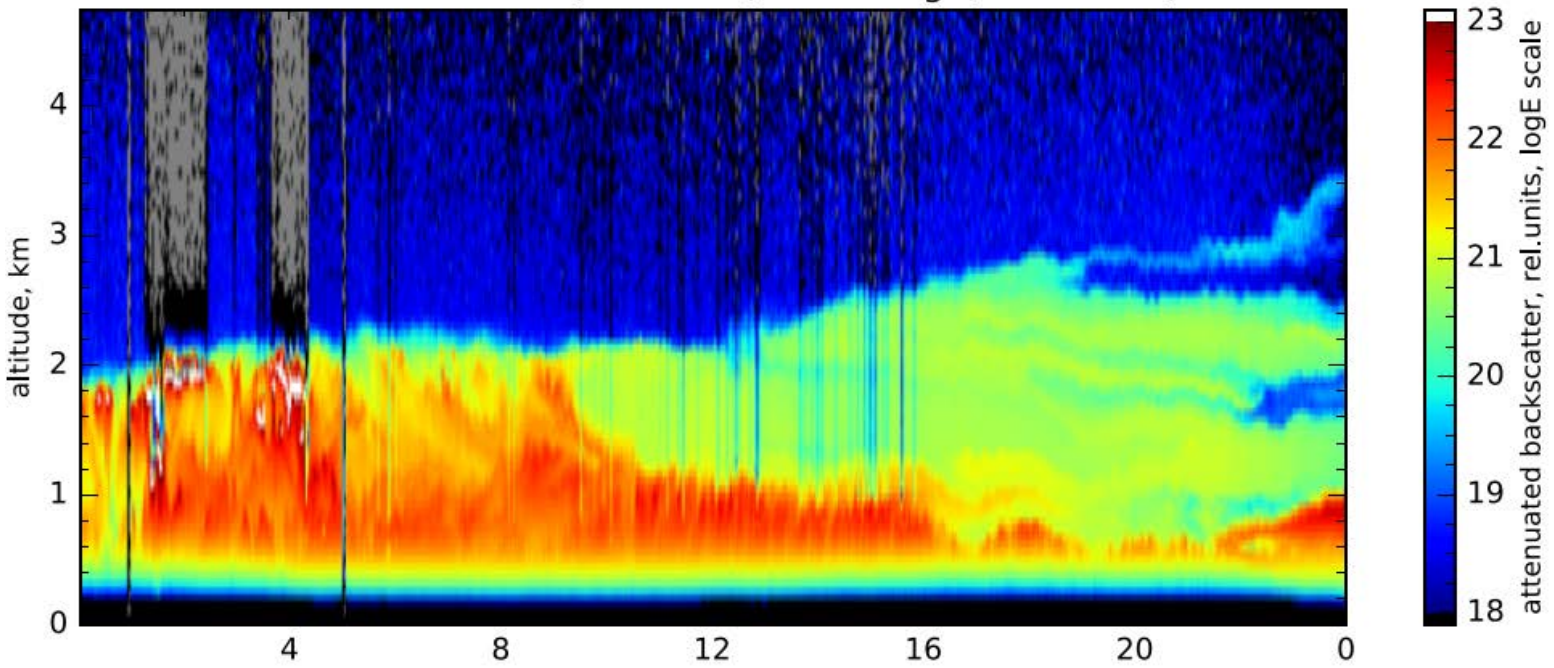


Water vapor mixing ratio, FAR+NEAR, res.: 600s, 60m-180m

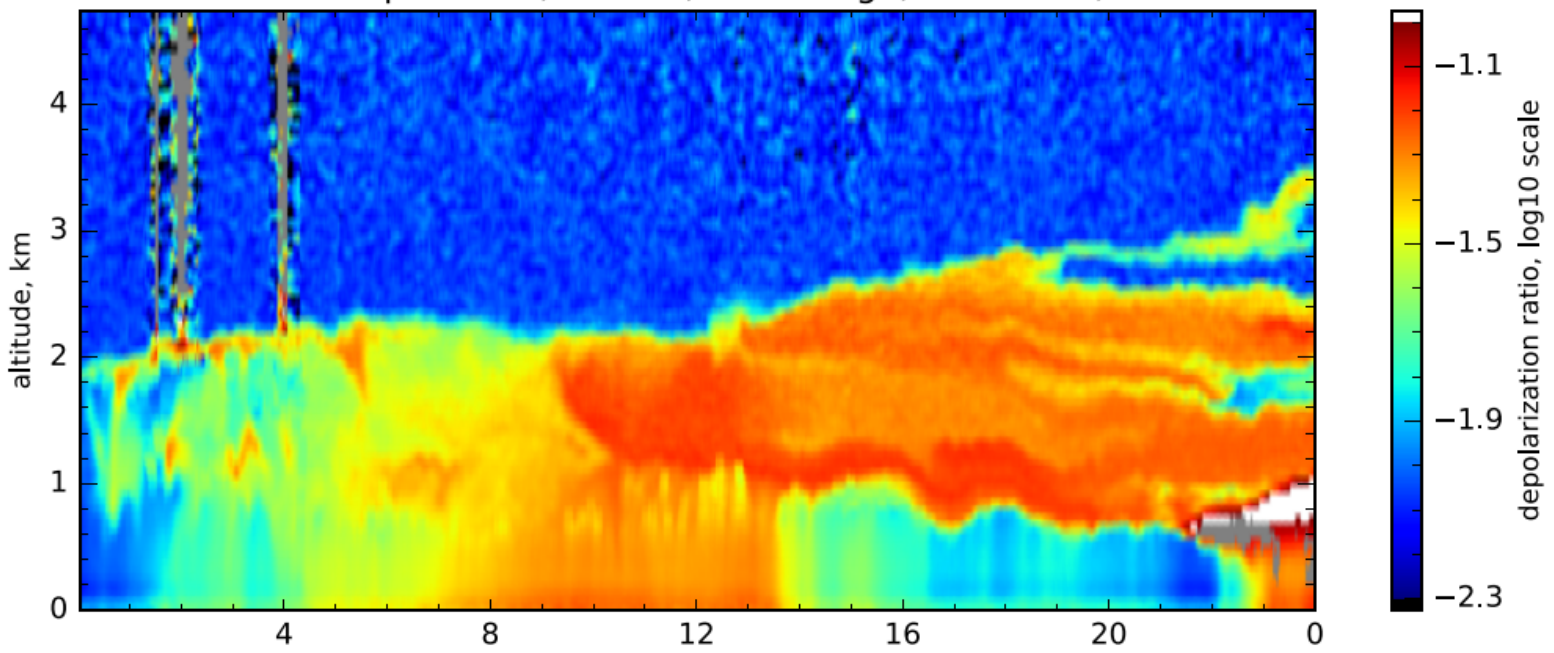


Raman lidar on Feb 25: backscatter (up to 15km and water vapor (up to 5km)

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



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



Raman lidar (lower 5km) on Feb 25: backscatter and depolarization