

# Meteor 0127 (2020)

Stefan Kinne ( 28 jan 2am)

## 1. Objective

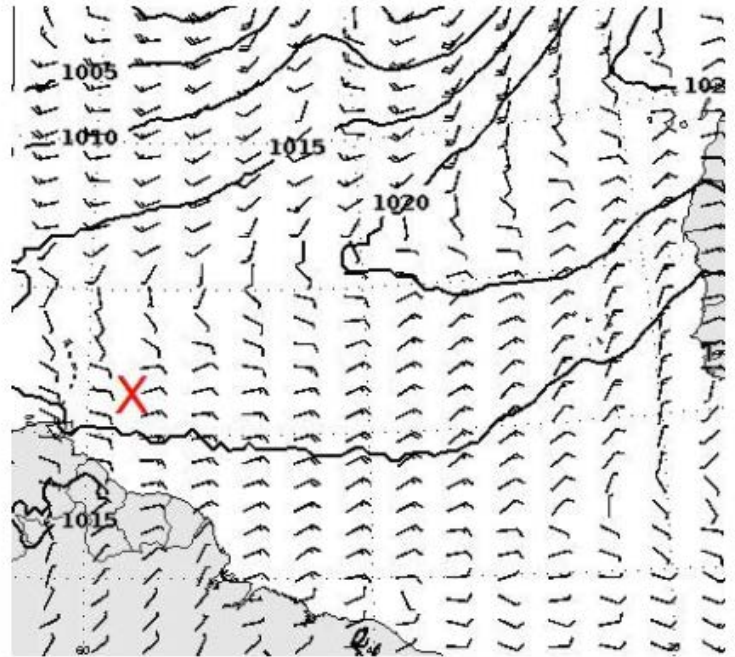
First longer cloud kite data-set. Learning the cloud kite limitations. Regular CTD every couple of hours and launching radiosondes at 2.45, 6.45, 10.45, 14.45, (18.45 not today) and 22.45 UTC.

After taking a MPI-MM water probe very early (2am) in the morning at the southern end of the HALO track we headed northward with regular CTD stops. Just after lunch we drifted off the track to the west to permit a 2hr track in the ENE (against the wind) direction for another cloud kite instrument test (still without the particle probe due to weight issues). The lift of the instrument package was minimal especially at higher altitude (>800m) due to the extra cable weight. In addition, a cloud kite aloft test in a stopped mode was successful, so that with sufficiently strong winds the cloud kite instrument could be kept in the air - even at station stops. At a first glance, data were taken though no quality checks yet. After returning to the central track we continued in our northerly progress towards L1 with regular CTD casts.

## 2. Synoptic Situation



Satellitenbild GOES 27.01.2020 13:00 UTC



Vorhersage für Dienstag 12 UTC

## Weather observations (every 3hr)

```
20 01 27001 99123 70567 11998 40805 10260 20212 40155 53012 70111 80008 22262 04275
2//// 3//// 4//// 5//// 6//// ICE ////
20 01 27031 99123 70570 46//// /0905 10259 20212 40161 50006 7//// 8//// 22262 04274
2//// 3//// 4//// 5//// 6//// ICE ////
```

```

20 01 27061 99121 70572 16/// /0905 10259 20214 40146 58015 7///// 8///// 22251 04273
2///// 3///// 4///// 5///// 6///// ICE /////
20 01 27091 99123 70572 46/// /0705 10259 20213 40141 55005 7///// 8///// 22201 04274
2///// 3///// 4///// 5///// 6///// ICE /////
20 01 27121 99126 70572 11498 70404 10260 20214 40160 53019 70222 81208 22202 04273
20100 308// 40803 5///// 6///// ICE /////
20 01 27151 99129 70572 41498 50404 10259 20211 40170 50010 70322 81308 22201 04273
20100 309// 40803 5///// 6///// ICE /////
20 01 27181 99130 70574 11598 10504 10260 20213 40148 58022 70111 81300 22271 04277
20100 309// 40803 5///// 6///// ICE /////
20 01 27211 99132 70571 41498 20605 10258 20219 40146 55002 71500 82800 22212 04275
20100 309// 40803 5///// 6///// ICE /////

```

High altitude cirrus cloud sheets in the morning, then blues skies before heading into the mid-level altocumulus cloud cover of a dying frontal system until the evening

### 3. Cruise-day Elements

IWV (integrated water vapor): 26 kg /m2 +/- 3  
LWP (liquid water path): 21 g /m2 +/- 23

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 PSU	Tdew °C	Tair °C	Twater °C	TrueDir deg	RH %	rel.Wind m/s	trueWind m/s	lw Rad W/m <sup>2</sup>	sw Rad W/m <sup>2</sup>	lat °N	lon °E
35.3953	21.17	25.94	27.58	84.72	74.6	2.11	5.39	376.27	-1.12	12.32	-56.76
35.4805	21.22	25.98	27.59	99.43	74.72	5.59	5.73	374.63	-1	12.34	-56.85
35.4528	21.27	25.99	27.45	90.87	74.85	2.82	4.92	375.87	-1.45	12.29	-56.94
35.5973	21.23	25.94	27.45	88.88	74.85	2.72	4.79	374.02	-1	12.21	-57.09
35.5804	21.44	25.83	27.37	94.82	76.32	4.66	5.62	377.07	-1	12.14	-57.22
35.5704	21.44	25.87	27.39	95.58	76.15	5.72	5.44	382.57	-1	12.13	-57.25
35.5679	21.54	25.89	27.39	86.28	76.63	5.4	5.11	388.13	-1	12.13	-57.25
35.565	21.64	25.84	27.34	75.47	77.3	6.01	5.08	383.47	-1	12.13	-57.24
35.6016	21.52	25.8	27.35	68.22	76.9	8.12	4.97	385.72	-1	12.24	-57.25
35.5359	21.36	25.8	27.43	67	76.02	6.51	4.22	383.15	-1.03	12.38	-57.25
35.4413	21.32	25.84	27.47	58.18	75.68	5.76	4.04	379.38	21.83	12.43	-57.25
35.3261	21.34	25.98	27.4	41.02	75.2	8.06	4.17	388.28	238.48	12.55	-57.25
35.2278	21.1	25.95	27.27	33.4	74.28	7.26	4.75	381.3	480.7	12.68	-57.25
35.2161	21.11	26.04	27.28	37.17	73.95	5.22	4.27	386.68	686.33	12.72	-57.25
35.2957	21.05	25.97	27.36	46.38	73.85	8.33	4.65	391.83	841.75	12.81	-57.25
35.3645	20.98	25.88	27.42	41.68	74.05	7.43	4.2	387.98	915.5	12.95	-57.25
35.3193	21.11	25.94	27.5	50.44	74.39	4.6	4.15	393.92	919.44	13	-57.25
35.3083	21.19	26.21	27.61	47.98	73.47	3.85	4.47	396.62	765.75	13	-57.34
35.3091	21.46	25.81	27.59	42.5	76.62	9.65	5.49	398.62	589.17	13.03	-57.34
35.3527	21.71	25.77	27.41	42.62	77.87	11.38	5.84	407.12	347.62	13.12	-57.18

35.3436	21.93	25.8	27.49	57.37	78.78	6.24	4.48	401.43	135.55	13.18	-57.07
35.3813	22.06	25.64	27.45	64.95	80.18	5.41	5.38	395.75	28.72	13.22	-57.1
35.439	22.04	25.7	27.5	80.92	79.78	5.21	5.54	392.65	-1	13.29	-57.24
35.4164	22.45	25.66	27.43	82.63	81.9	8.51	6.91	393.15	-1	13.35	-57.25

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

station no.	UTC	device	action	latitude	longitude	depth	contact person
M161 60	27 jan 2020 / 01:04-01:42	CTD	CTD	12°20.471 N	56°51.065' W	800	Baranowski
M161 61	27 jan 2020 / 04:48-05:43	CTD	CTD	12°07.501 N	57°14.732' W	800	Baranowski
M161 62	27 jan 2020 / 07:05-07:33	CTD	CTD /MPI	12°07.502 N	57°14.736' W	250	Baranowski
M161 63	27 jan 2020 / 09:48-10:25	CTD	CTD	12°25.123 N	57°14.705' W	800	Baranowski
M161 64	27 jan 2020 / 13:00-13:40	CTD	CTD	12°42.750 N	57°14.737' W	800	Baranowski
M161 65	27 jan 2020 / 16:07-16:45	CTD	CTD	13°00.024 N	57°14.717' W	800	Baranowski
M161 66	27 jan 2020 / 22:27-23:02	CTD	CTD	13°18.024 N	57°14.734' W	800	Baranowski

#### 4. Instrument Status

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

	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
cloud-kite	<b>W</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>W</b>	Callum, Beth
UAV	<b>W</b>	Darek, Jakub, Michal, Wojciech
eddy-flux-data	<b>W</b>	Katharina, Imke, Heike
wind-lidar (DTU)	<b>W</b>	Geiske, Kevin
wind-lidar (Bre)	<b>F</b>	Geiske, Kevin
MAX-DOAS	<b>W</b>	Alma

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

### 5. Outlook

Tomorrow, we will reach L1 early in the morning. We will reach to top of the Meteor track and head south again with regular CTD stops until noon. Then the cloud-kite folks get a chance for consecutive 2 hour samples near the LCL without taking the instrument down, with hopefully strong enough side-winds.

