

Wx-0130 (30 Jan 2020)

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1. Three day outlook

Synopsis – Again ridge continues to dominate over operational area. Area mostly clear with fair weather cumulus and slight increase in dust. Winds Southeast 5 to 10 kts but may be increasing into tomorrow.

Forecast – Dry conditions will continue and slow influx of the Saharan Dust layer tomorrow will reduce visibility. Seas slight to moderate – northeast to east waves 1 to 1.5 metres, NE 6 m swells every 10 to 12 sec from the northeast.

3-day outlook – Little change hazy: ridge to weakening by dust and poor visibility. Seas - moderate with 2 to 2.5 m into Friday into Saturday with 6 to 6.5 m swells becoming more easterly.

air mass origin — report from 28.1.: According to the IFS forecast, air masses arriving in BB at 300-500 hPa (red pts.) are advected by westerlies in the zonally oriented jet stream. Part of these air masses originate at lower levels in the southern hemisphere and rise on their way north where they join the westerly flow (link and link). At mid levels (500-800 hPa, orange and yellow pts.) air masses are advected by westerlies and loop southward before reaching BB. Air masses arriving at 800-900 hPa reach BB from many directions, and partially pass the NTAS buoy on their way. Finally, air masses arriving at 900-1000 hPa are mostly advected by the easterly trade winds, after spending a few days off the coast of West Africa (link).

2. Data for Flight Planning

Yesterday's conditions at various sites represented by daily mean and standard deviation:

Field	BCO	CE	NTAS	BT
Lat	13°09'46"	13°21'	14°49'	08°00'
Lon	59°25'44"	57°17'	51°01'	55°00'
LCL	600 ± 70 m	540 ± 60 m*		
CBH				
CTH	1.3 - 2.2 km	1.5 - 3.5 km	-	
Cirrus Top	-	-	-	-
AOD	-	0.21 ± 0.05 *		
PW	33.4 ± 1.3 mm	36.8 ± 2.1 mm*		
Sfc Wind	3 m/s, 85°	8.0 m/s, 90°	5.6 m/s, 117°	
3km Wind	2.7 m/s, 300°	3.9 m/s, 306°*		
6km Wind	3.1 m/s, 41°	6.7 m/s, 8°*		
9km Wind	8.0 m/s,	8.7 m/s, 303°*		
SST	-	27.5 °C	26.2 °C	
Inversion height	2.0 ± 0.05 km	2.2 ± 0.1 km*		
EIS	3.9 ± 0.4 K	4.9 ± 0.6 K*		
LTS	15.2 ± 0.7 K	16.3 ± 0.7 K*		
Cloud Patterns	sugar	one flower	sugar	sugar

CE: circle east, BT: Boulevard des Tourbillons

* Meteor soundings / data (2:45 - 10:45 UTC)

3. Model forecast

Comparison of yesterday's conditions to forecasts for 57°30' W and 13°30' N:

Field	UK MET	BCO CE
LCL	500 m	540 ± 60 m*
CTH	1 - 2 km	1.5 - 3.5 km
Cirrus Top	n/a	n/a
PW	30 mm	36.8 ± 2.1 mm*
Sfc wind	5 m/s, 85°	8.0 m/s, 90°
SST	27 °C	27.5 °C
Cloud pattern	sugar	one flower

Forecast for today at 57°30'W and 13°30' N:

Field	UK MET
LCL	530 m
CTH	2 km
Cirrus Top	16 km (broken)
PW	34.3 mm
Sfc wind	7 m/s, 98°
SST	26.7 °C
Cloud pattern	sugar turning to gravel

4. Figures

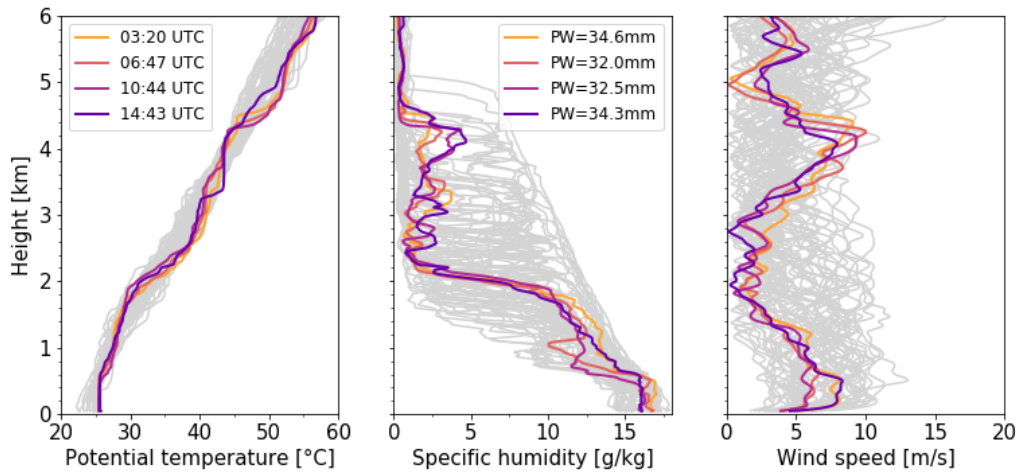


Figure 1: Soundings from BCO throughout EUREC4A (grey) as compared to soundings from 29.1. (colors).

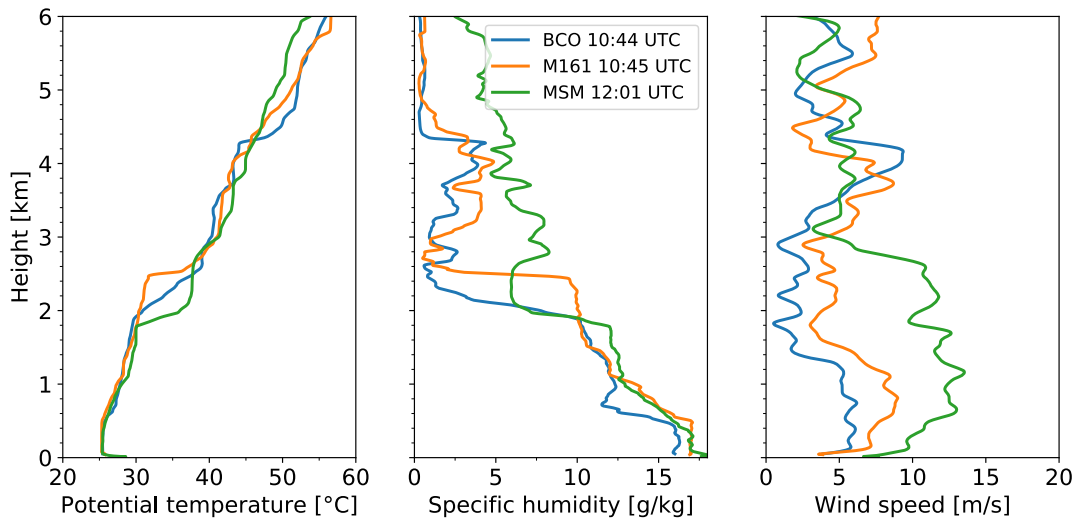


Figure 2: Soundings from three different stations.

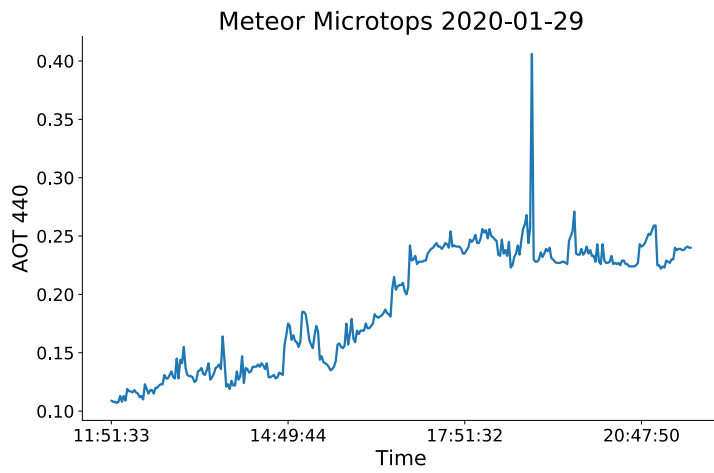


Figure 3: The Sahara dust layer reaches the Meteor as seen in AOT (440) from Microtops.