

## Wx-0208 (08 Feb 2020)

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### 1. Three day outlook

*Synopsis* – Ridge dominant over north Atlantic setting up strong pressure gradient, windy conditions and choppy seas; Isolated showers related to patchy (flowers) on the moist easterly winds.

*Forecast* – Night time/early showers will be isolated and brief. Winds will remain brisk ...ENE to Easterly at 15 to 20 kts gusting to 25 kts.

*Seas moderate* - waves 7 to 10 feet, swells every 9 to 12 sec from the northeast.

3-day outlook – Atlantic ridge remains steady maintaining brisk winds, dry and stable weather...shallow cumulus clouds are expected to dominate. An upper level trough just east of the islands could induce only a few showers. Weakening expected towards Monday as new front traverses to the north of the island chain.

*Air Mass Origin* -.

### 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		850 ± 60 m **** (860 ± 130 m *****)		800 ± 100 m*
CBH-LCL	95 ± 80 m	90 ± 80 m		
CTH	0.8 - 1.6 km ***	3.1 - 4.0 km ***	3.1 - 4.0 km ***	-
CIRRUS TOP	-	-	-	-
AOD	0.1 ***	0.2 ***	-	0.1 ***
PW (MM)		28.65 ± 1.9 mm ****	30.6 ± 6.5 mm **	28.7 ± 1.7 mm*
SFC WIND		12.5 m/s ; 79 ° ****	7.8 m/s, 50.2°	
3KM WIND		12.6 m/s ; 71 ° ****	12.7 m/s, 66° **	5.7 m/s ; 95 ° *
6KM WIND	15.7 M/S, 76.6°	9.8 m/s ; 51 ° ****	9.7 m/s, 49° **	5.8 m/s ; 17 ° *
9KM WIND	10.1 M/S, 56°	7.3 m/s ; 339 ° ****	6.7 m/s, 334° **	7.8 m/s ; 269 ° *
SST		27.4° C ****	26 °C	
INVERSION HEIGHT	2.4 ± 0.3 KM	2.5 ± 0.5 km ****	2.4 ± 0.6 km **	2.0 ± 0.5 km *
EIS	4.4 ± 1.1 K	4.5 ± 1.1 K ****	4.1 ± 3.5 K **	4.1 ± 0.5 K *
LTS	15 ± 1 K	15.0 ± 1.3 K ****	14.4 ± 3 K **	14.6 ± 0.7 K *
CLOUD PATTERNS	sugar	Flowers- >gravel	fish	clear

\* from Atalante soundings \*\* from Ron Brown (between CE and NTAS)

\*\*\* from MODIS on Terra \*\*\*\* from Meteor soundings \*\*\*\*\*from Meteor ship mast data  
 CE: circle east, BT: Boulevard des Tourbillons

### 3. Model forecast

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

FIELD	AROME	HARMONIE	UK MET	OBS CE
LCL	1000 m		about 700m	850 ± 60 m
INVERSION HEIGHT	2600 m		2500m	3.1 - 4.0 km
CIRRUS TOP PW	no cirrus		no cirrus	28.65 ± 1.9 mm
SFC WIND	10 M/S		11 m/s	12.5 m/s ; 79 °
CLOUD PATTERNS	Gravel/flowers	Large flowers	Gravel/Flowers	Flowers->gravel

### 4. Figures – yesterday's conditions

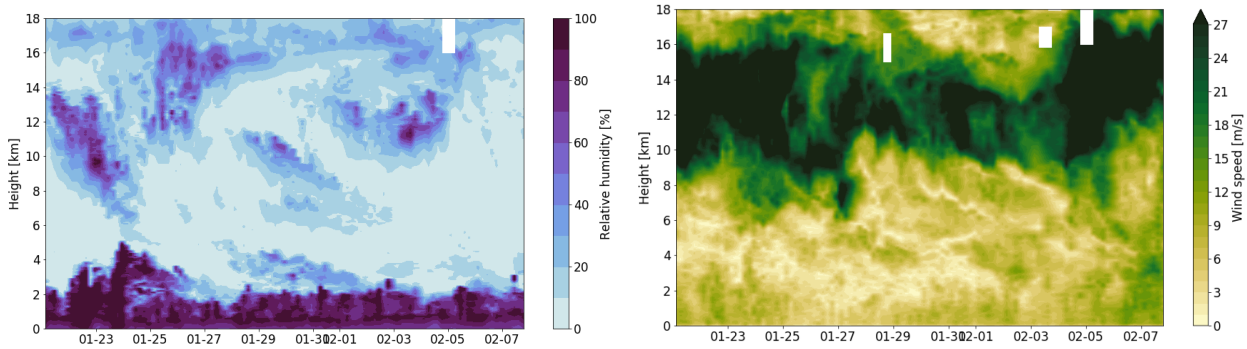


Figure 1: Soundings from BCO throughout EUREC<sup>4</sup>A of relative humidity (left) and wind speed (right). Note that the wind speed colorbar is saturated.

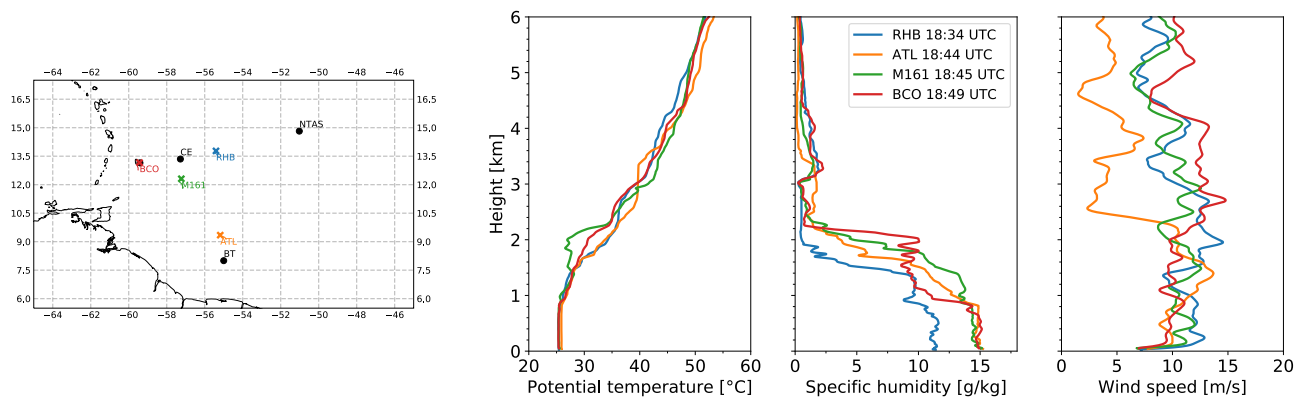
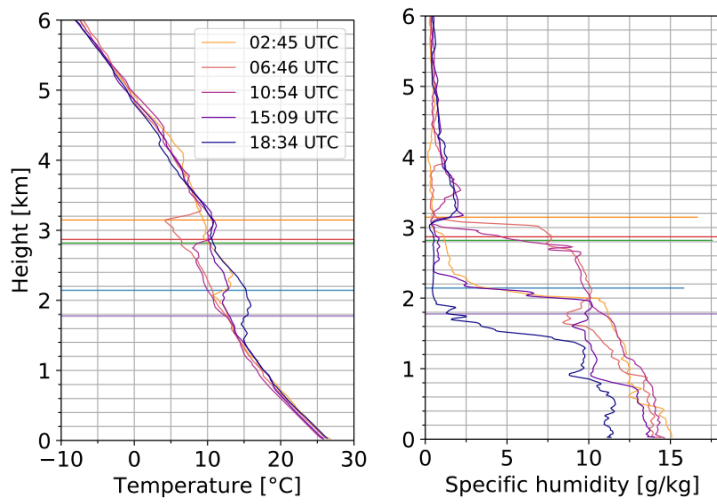


Figure 2: Soundings from four different stations.



*Figure 3: Soundings from R/V Ron Brown throughout 07Feb2020. The 18:34UTC sounding is surprisingly dry compared to the others – the ship was moving into a very clear, drier region per satellite imagery.*