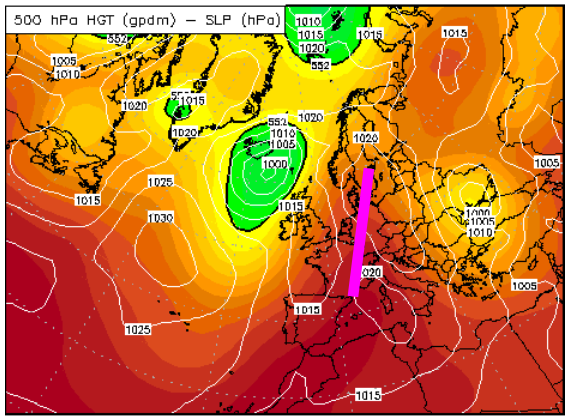
Case study: 27.06.2011

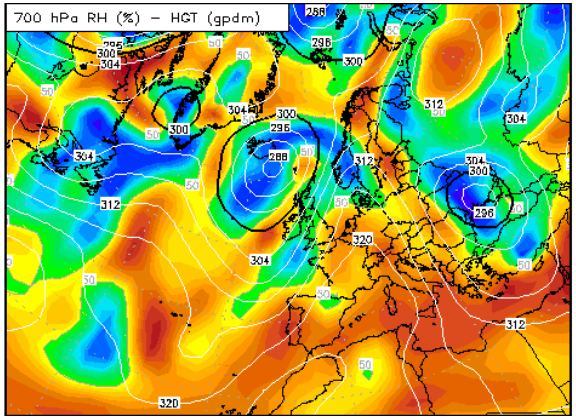
The ‘morning cooling’

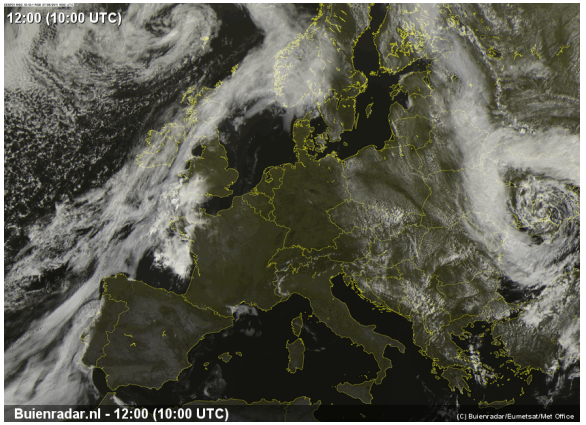
By Marius O. Jonassen,
University of Bergen

General weather situation

27.06.2011

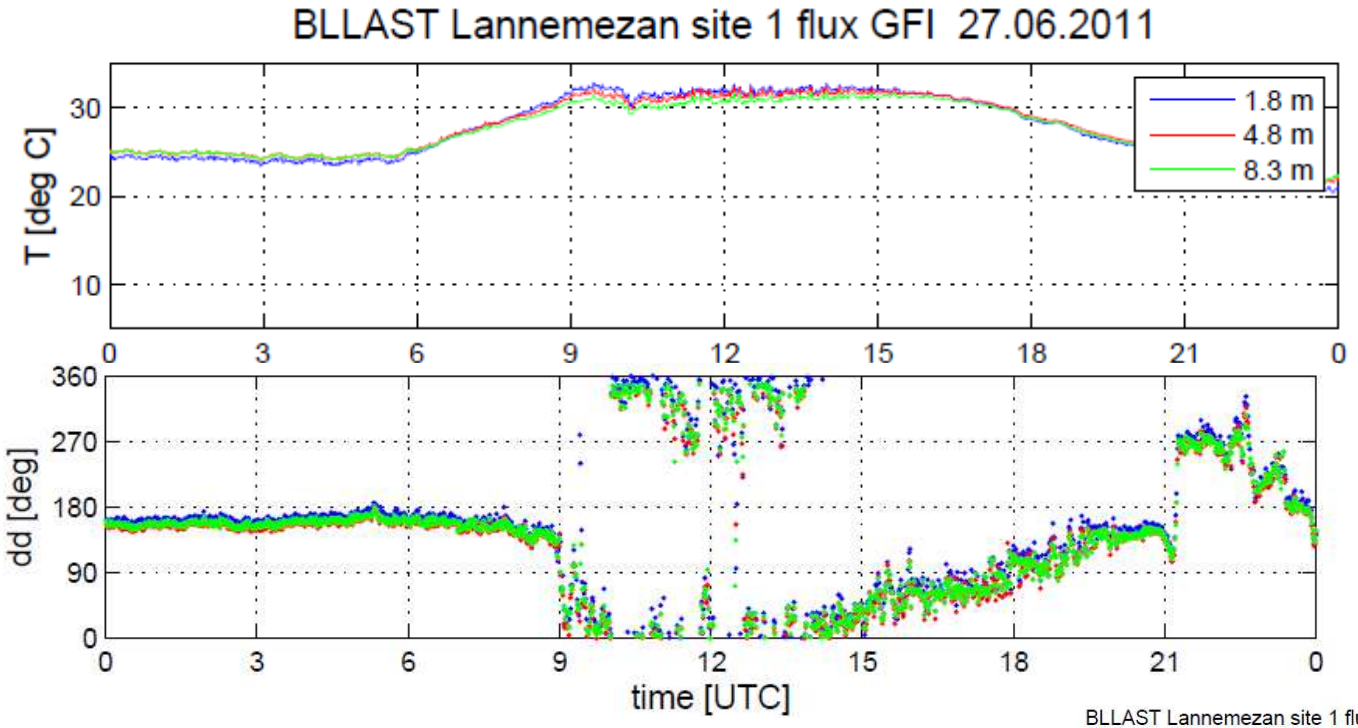




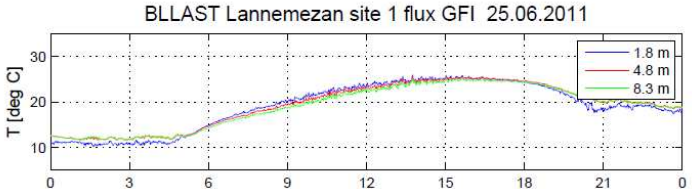


Ground based measurements at Site 1

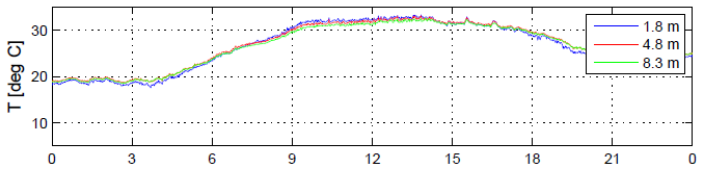
27.06.2011



25 June



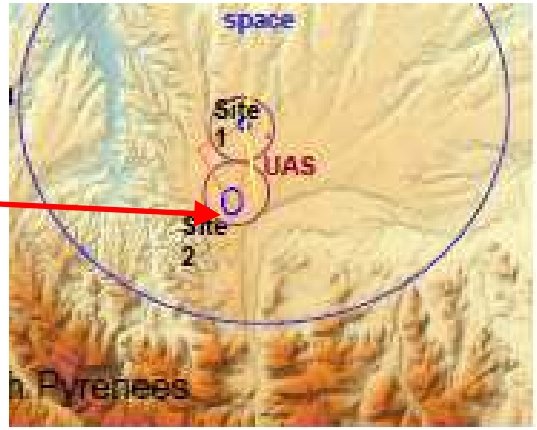
26 June



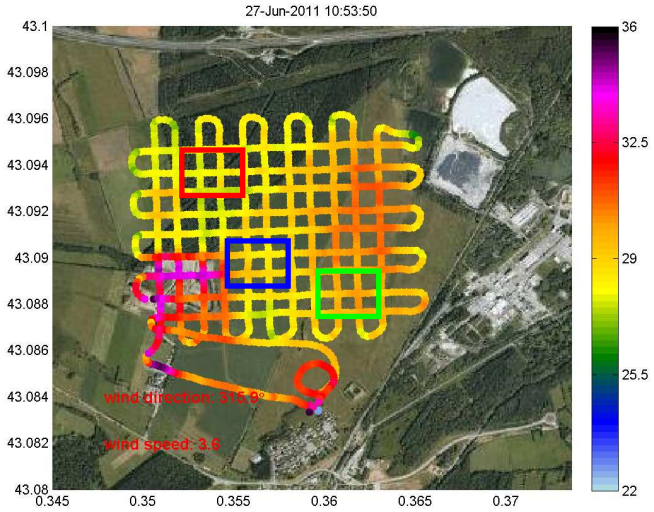
SUMO profiles at Site 2

12 soundings, first at 0719 and last at 1955 UTC
+ 12 horizontal surveys

SUMO HQ:



Surface temperature



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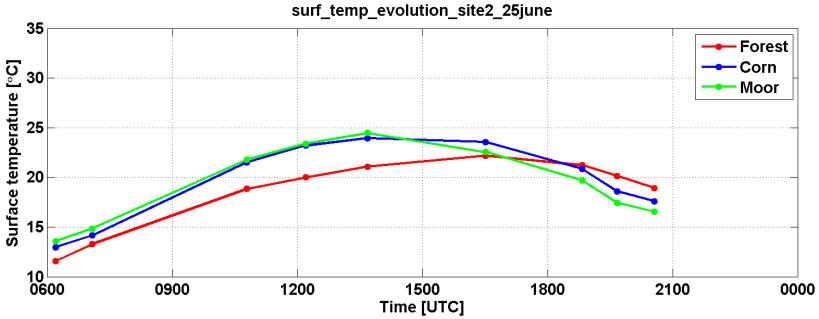

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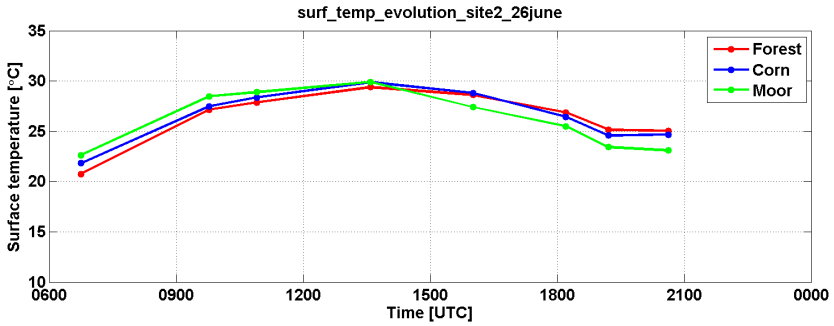

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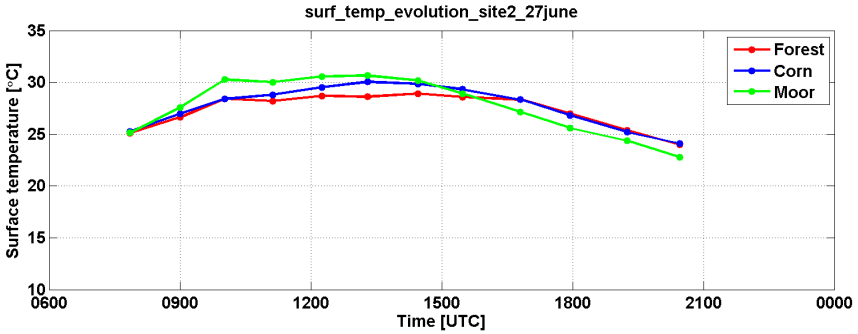
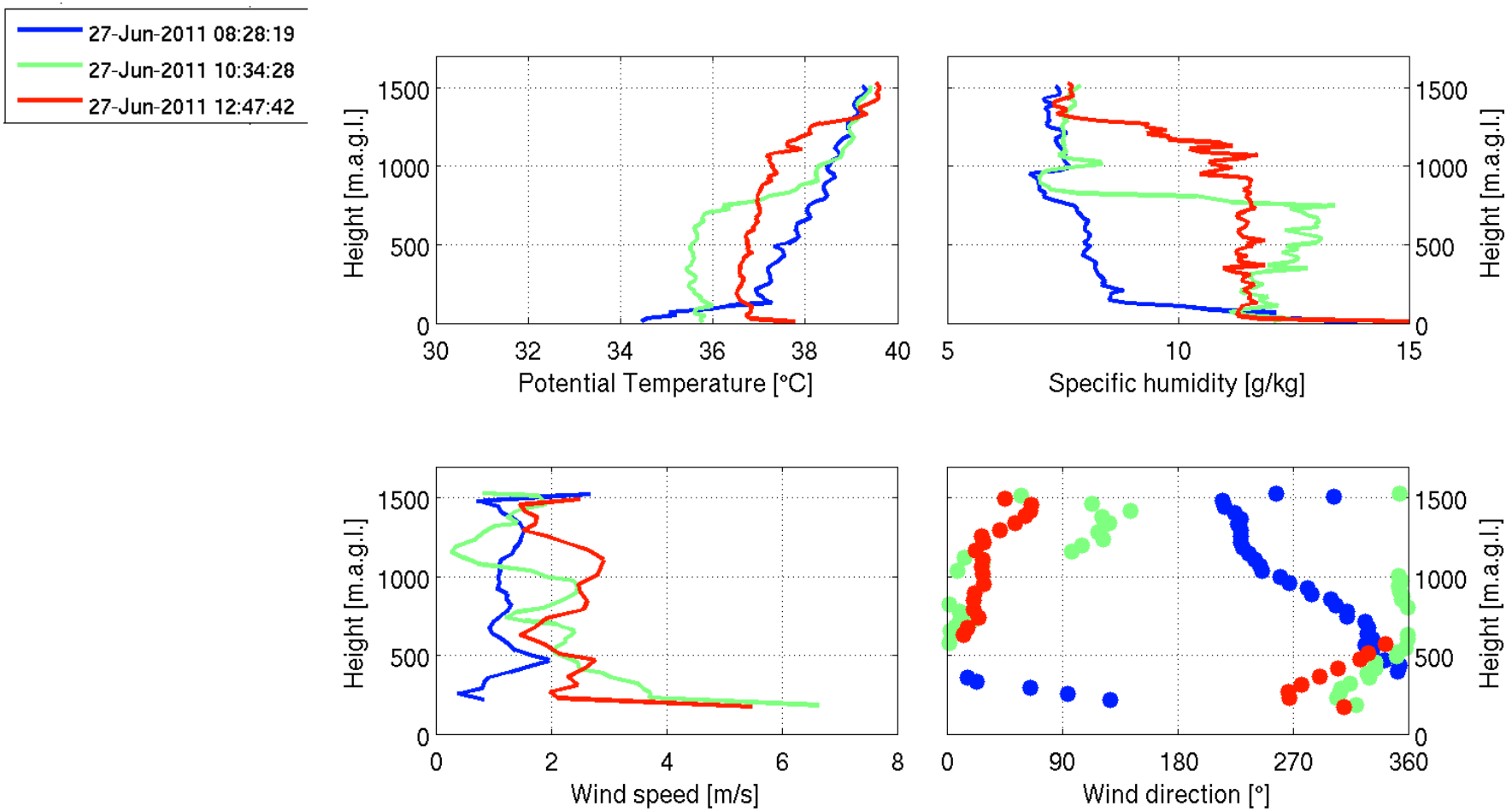
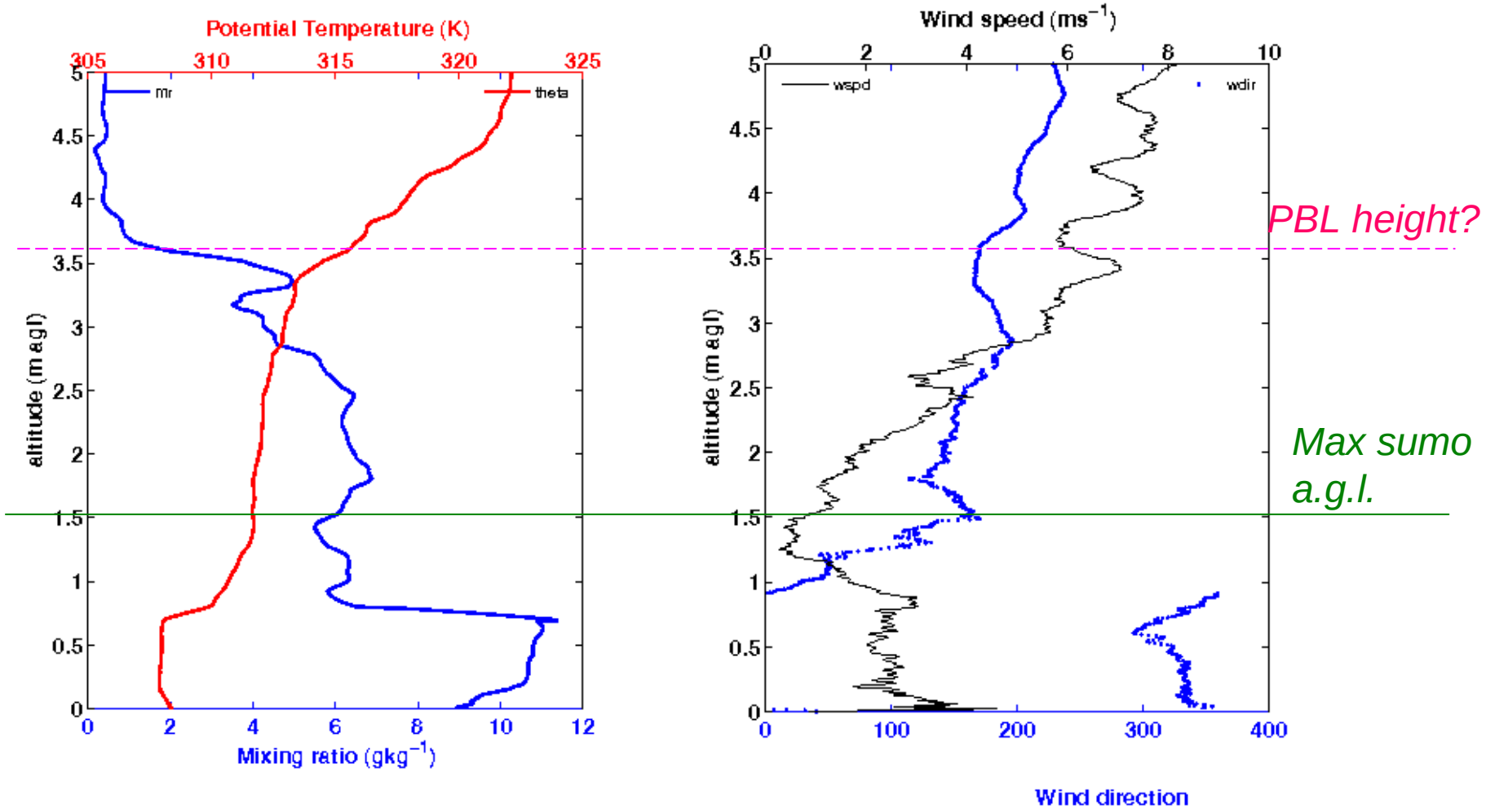


SUMO profiles

27.06.2011

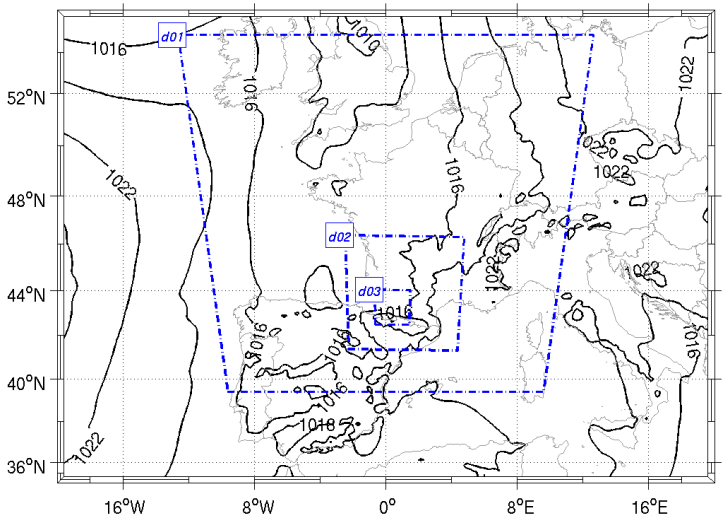


1050 UTC radiosonde

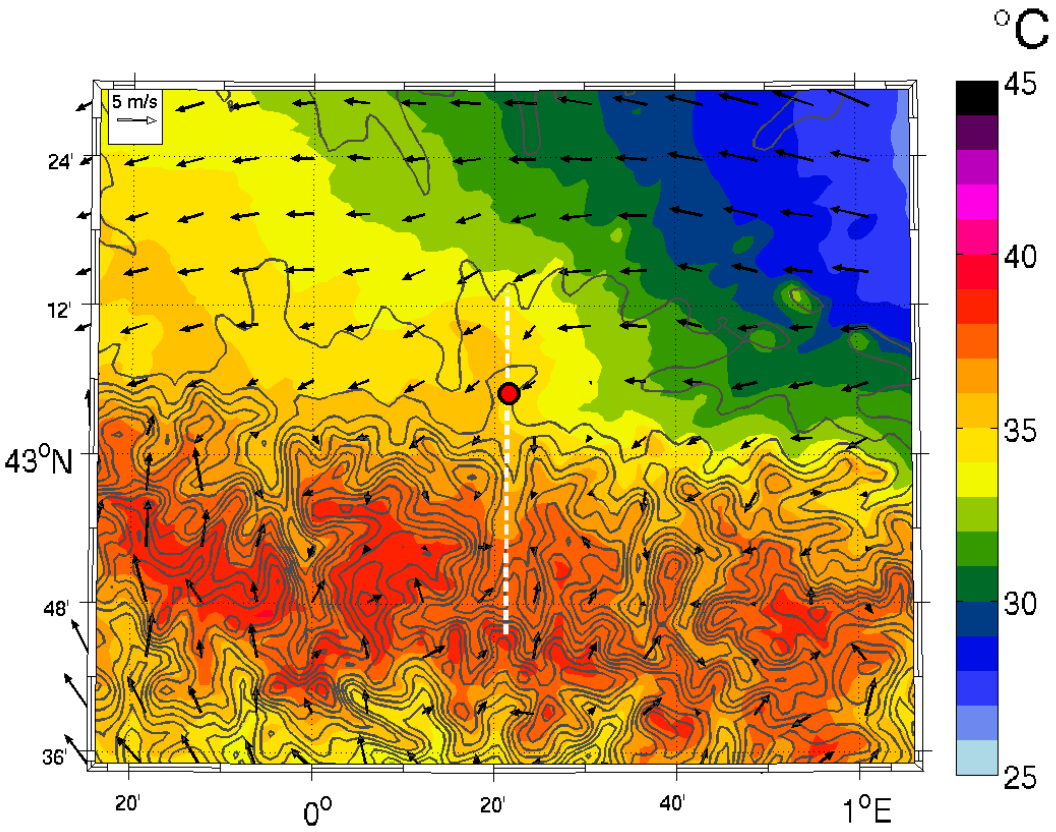


Numerical simulation

- WRF 3.3.1
  - 3 two-way nested domains (9-3-1 km)
  - YSU pbl scheme (non-local K)
  - Noah land surface model

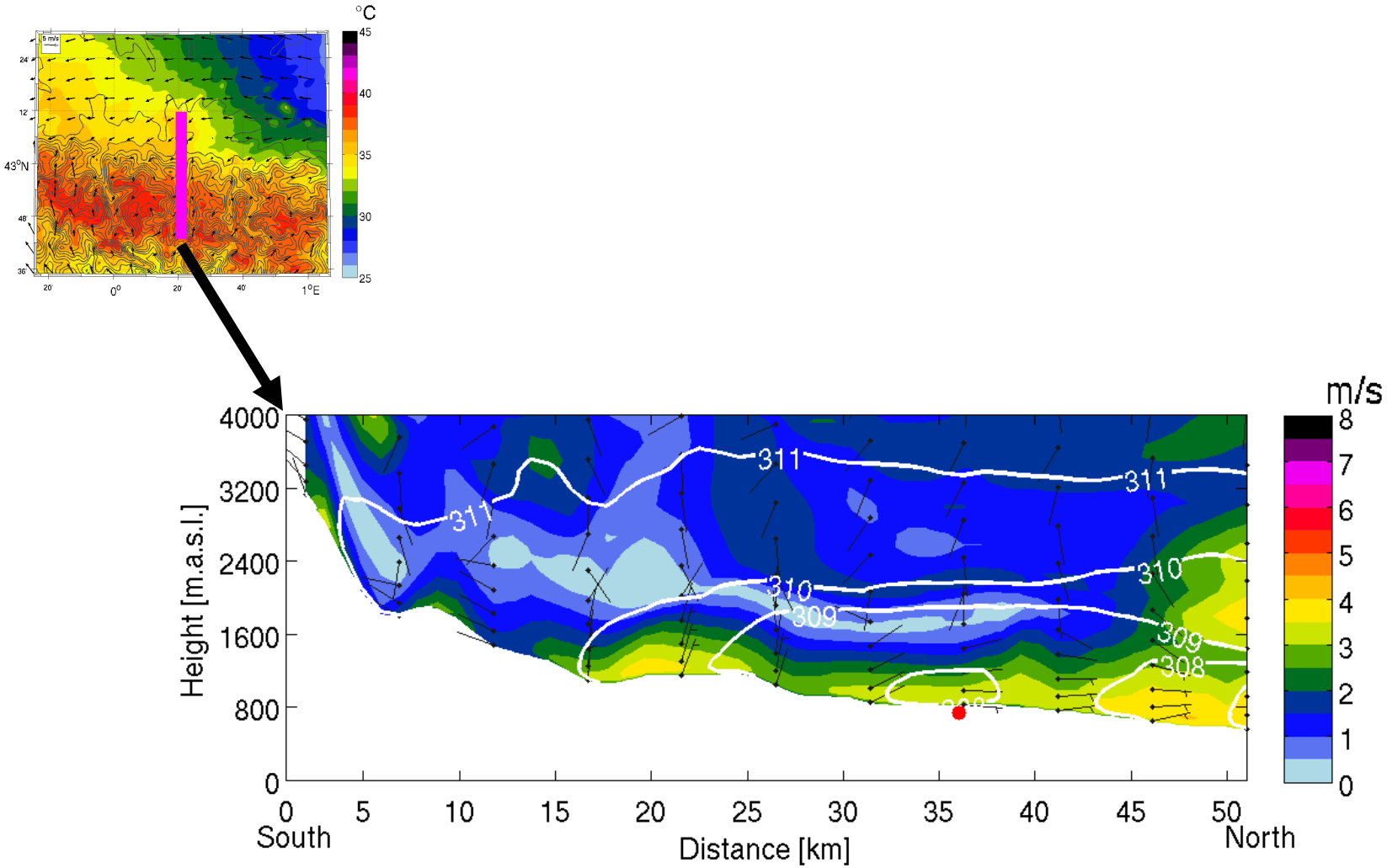


WRF results



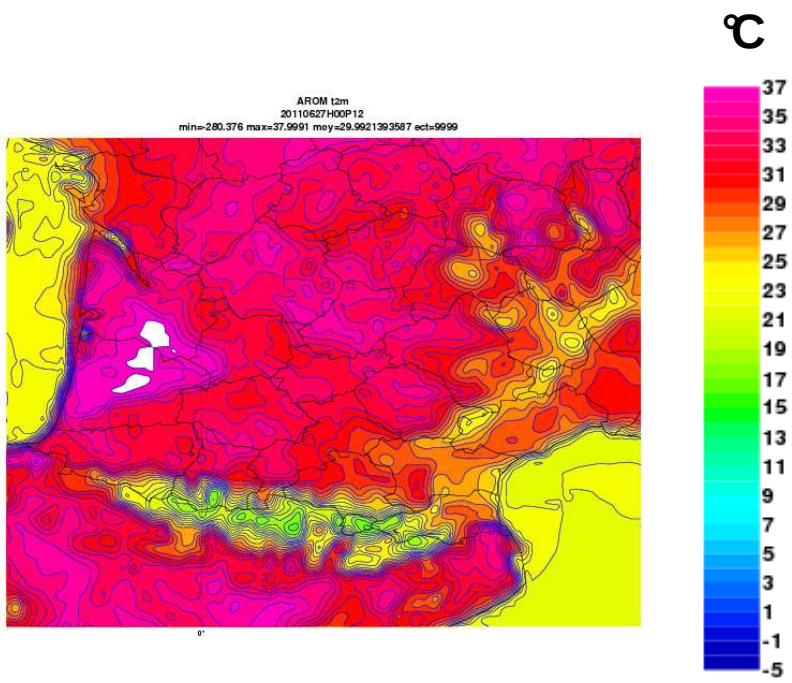
Simulated potential temperature and wind at 267 m.a.g.l. 1100 UTC (1km horizontal resolution)

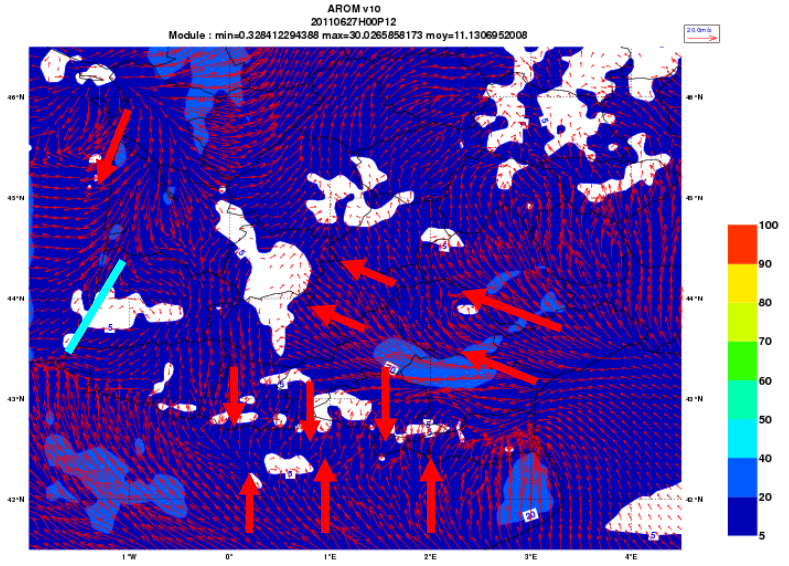
WRF results



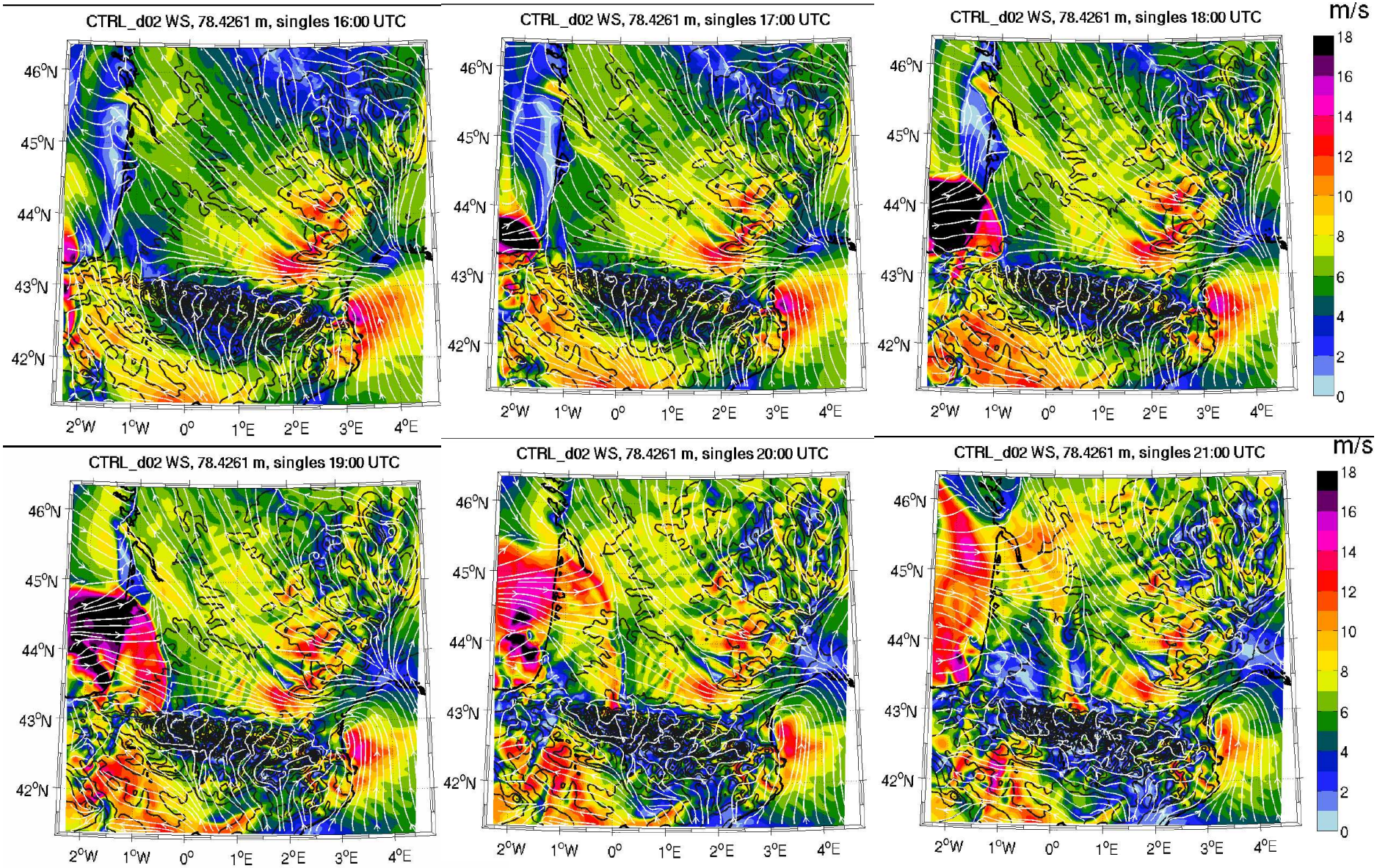
1100 UTC

Arome results

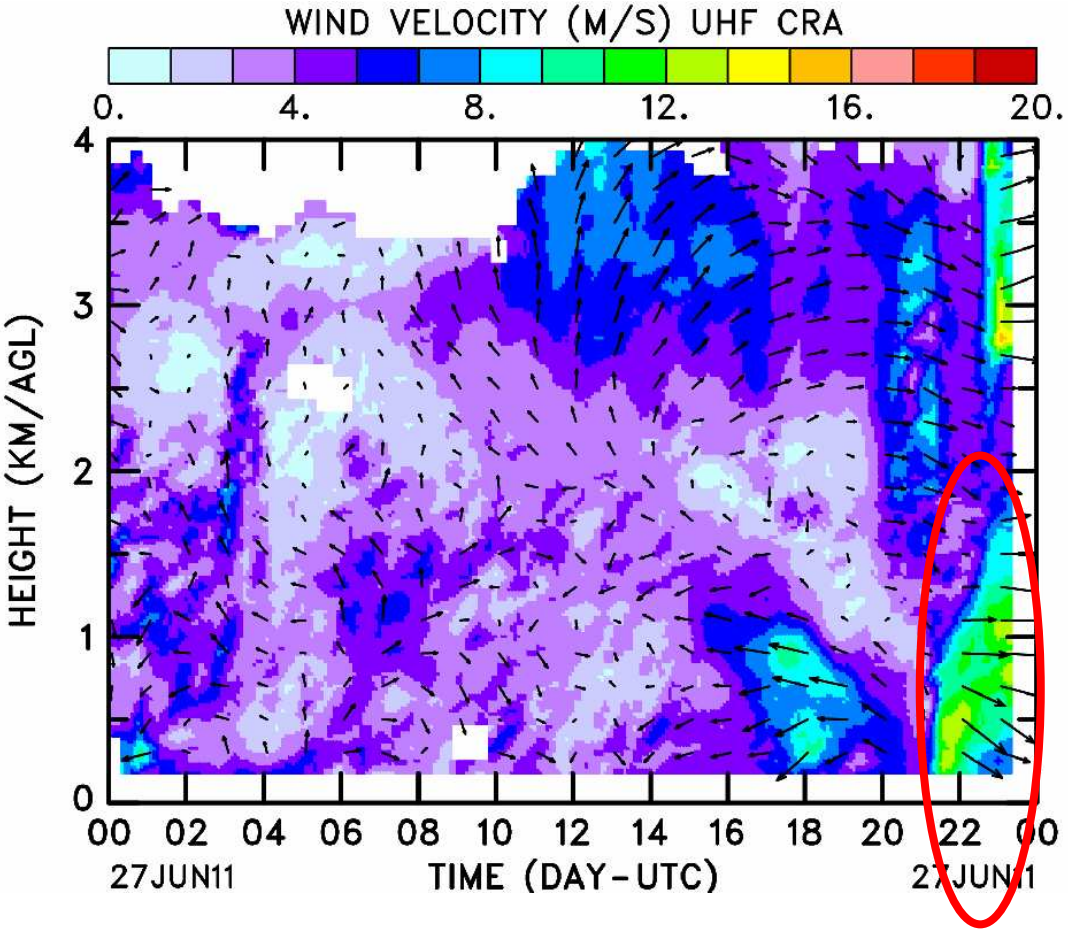


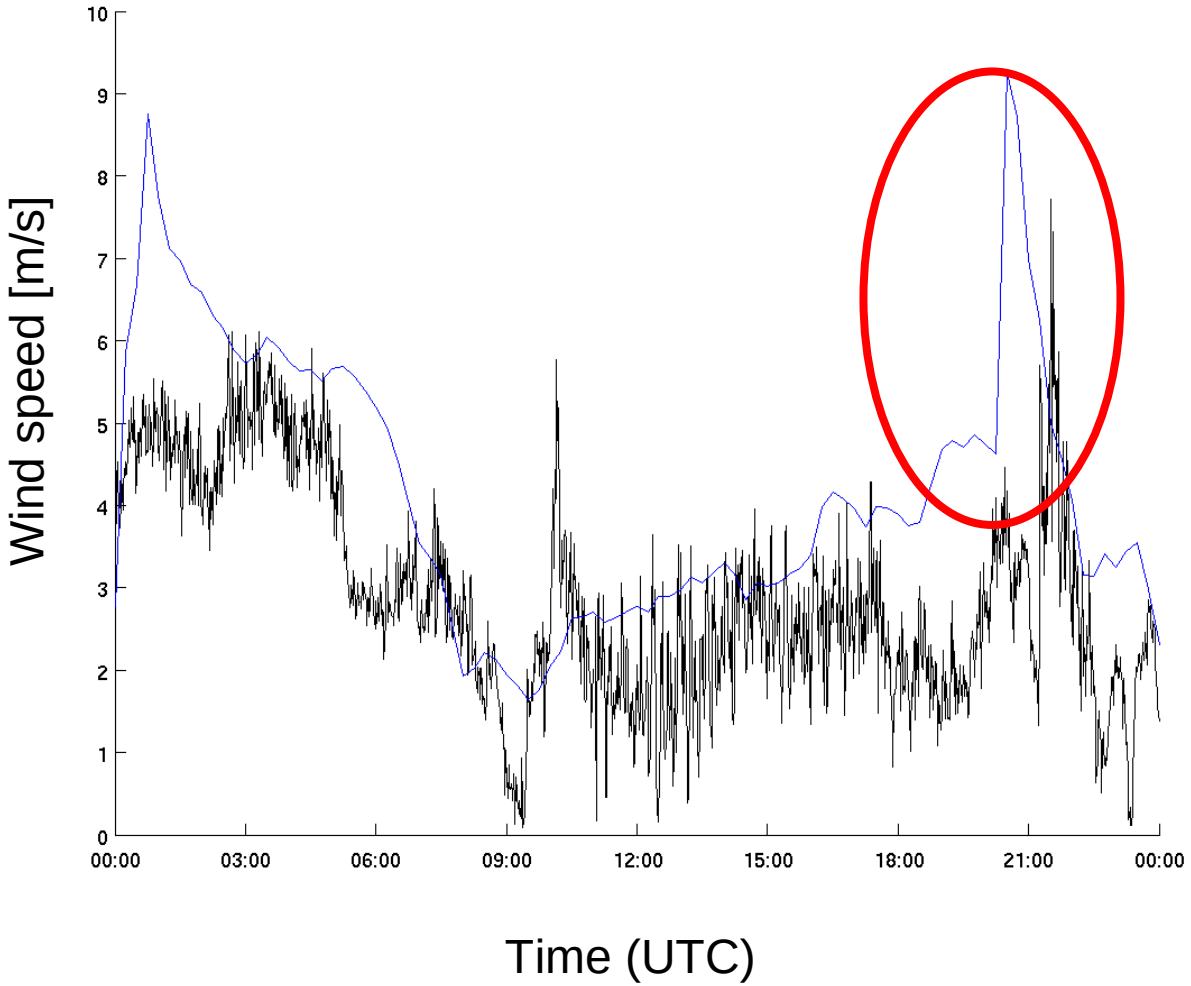


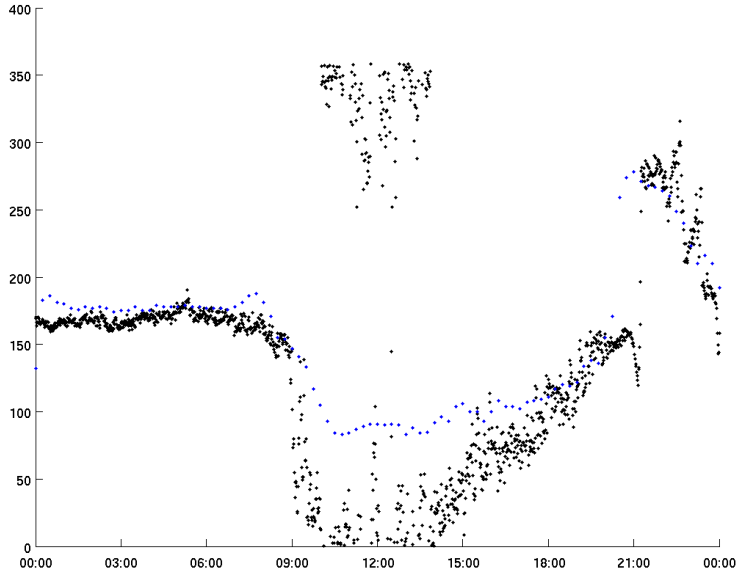
The evening “storm”



UHF at Lannemezan




Wind speed [m/s]
10
9
8
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Time (UTC)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250
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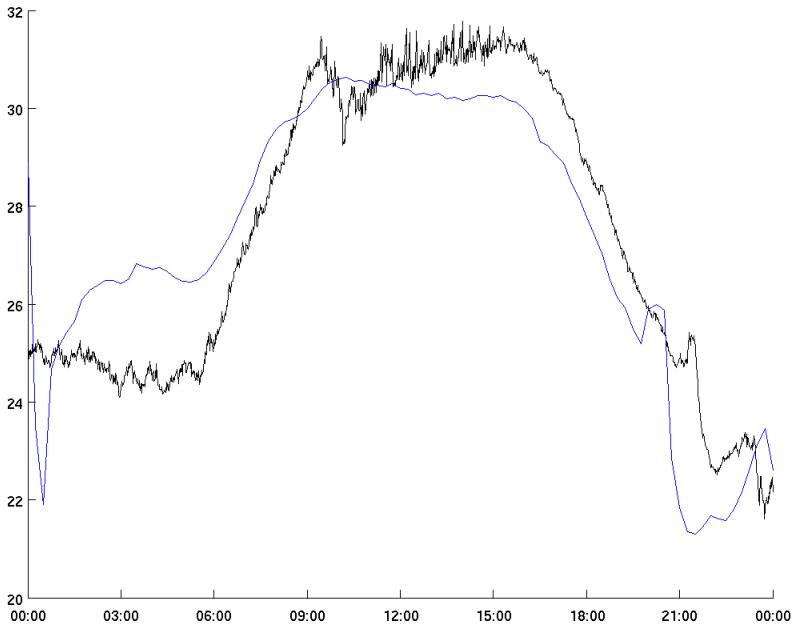
32
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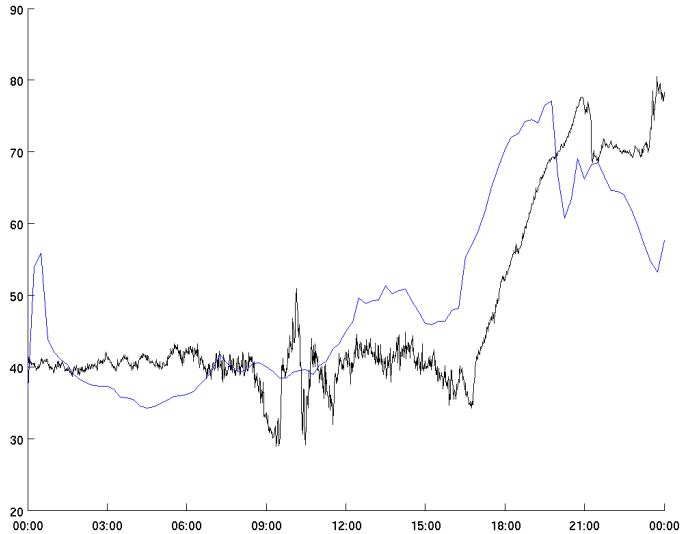
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