

201505 - Heatwave - Spain, Portugal

Status:Finalized Material from: Fernando, Linus

Discussed in the following Daily reports:

Picture

1. Impact

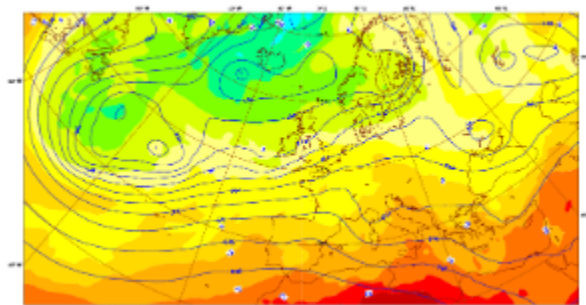
In mid-May Spain and Portugal experienced a heatwave. On the 13 May several stations in southern Spain broke their May record (including Madrid, Seville, Granada and Cordoba). In Carcaixent the maximum temperature was 42.9°, which is a new May record for Europe. (<http://www.washingtonpost.com/blogs/capital-weather-gang/wp/2015/05/14/scorching-spain-heat-breaks-all-time-may-records-for-europe/>)

2. Description of the event

The plots below shows analyses of z500 and t850 for the period of the heat-wave.

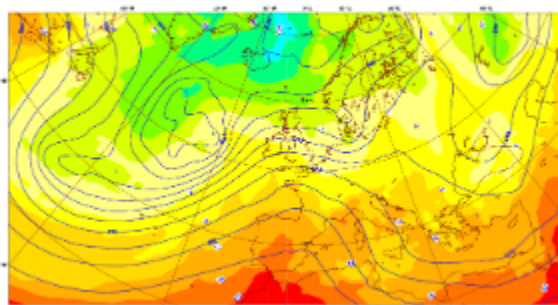
z500 and t850 analysis

Saturday 9 May 2015 00UTC GRCMWP Analysis 1-000 VT: Saturday 9 May 2015 00UTC
850 hPa Temperature / 500 hPa Geopotential



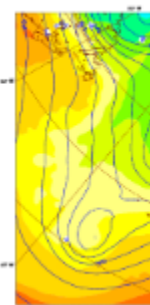
1. 9 May 00z

Sunday 10 May 2015 00UTC GRCMWP Analysis 1-000 VT: Sunday 10 May 2015 00UTC
850 hPa Temperature / 500 hPa Geopotential



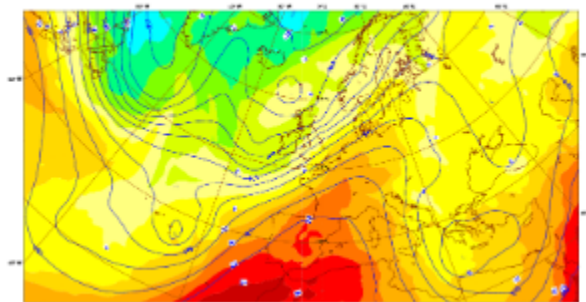
2. 10 May 00z

Monday 11 May 2015 00UTC GRCMWP Analysis 1-000 VT: Monday 11 May 2015 00UTC
850 hPa Temperature / 500 hPa Geopotential



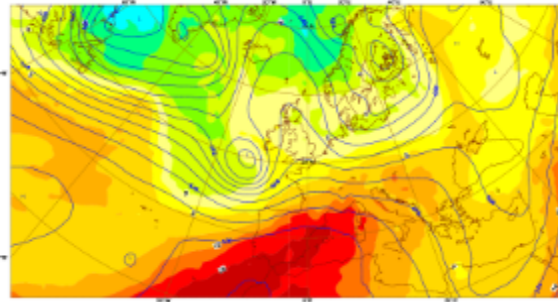
3. 11 May 00z

Tuesday 12 May 2015 00UTC GRCMWP Analysis 1-000 VT: Tuesday 12 May 2015 00UTC
850 hPa Temperature / 500 hPa Geopotential



5. 13 May 00z

Thursday 14 May 2015 00UTC GRCMWP Analysis 1-000 VT: Thursday 14 May 2015 00UTC
850 hPa Temperature / 500 hPa Geopotential



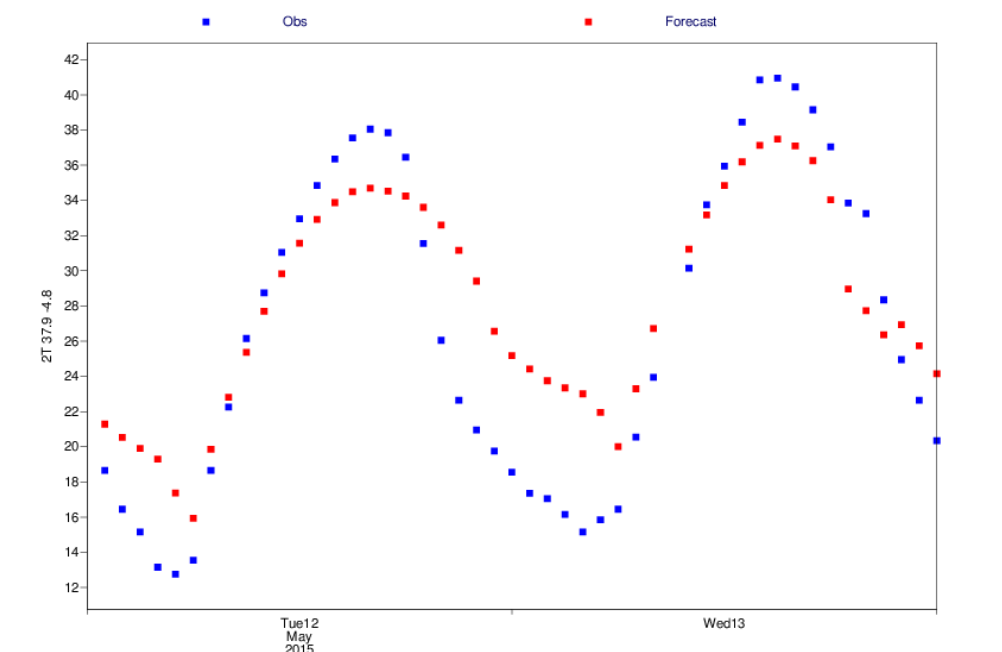
6. 14 May 00z

3. Predictability

3.1 Data assimilation

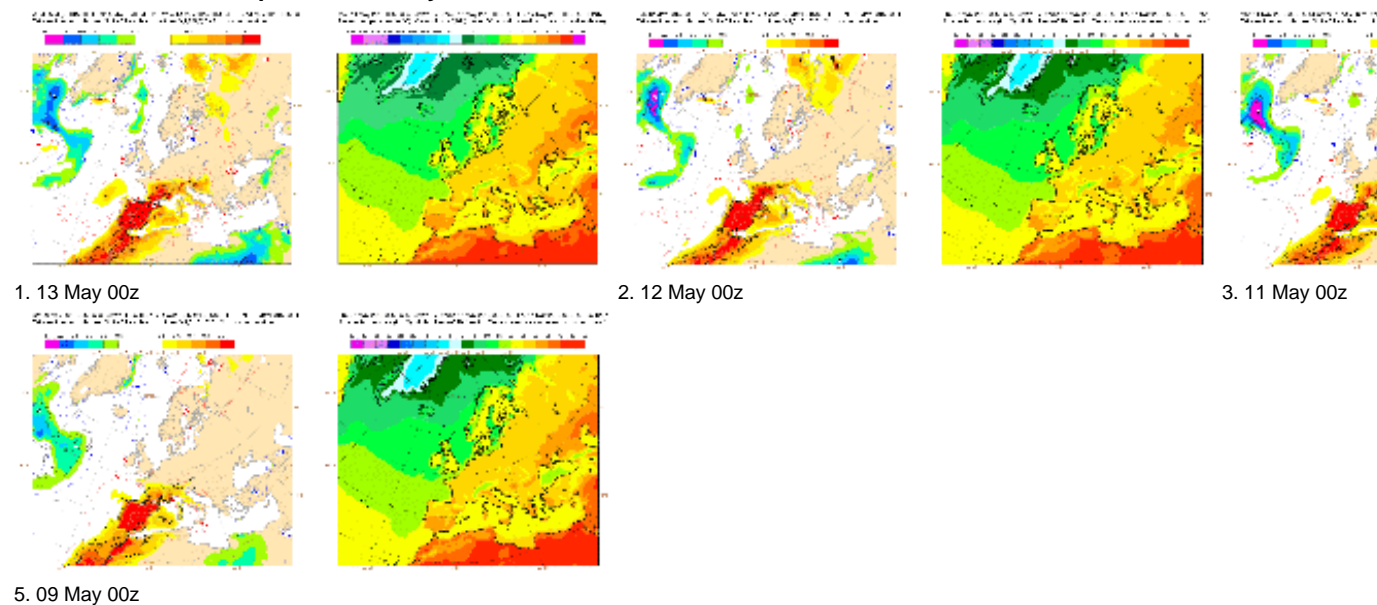
3.2 HRES

The plot below shows hourly observations (blue) and hour values from the HRES forecast initialised 12 May 00z (red). In the forecast the daily cycle is underestimated.

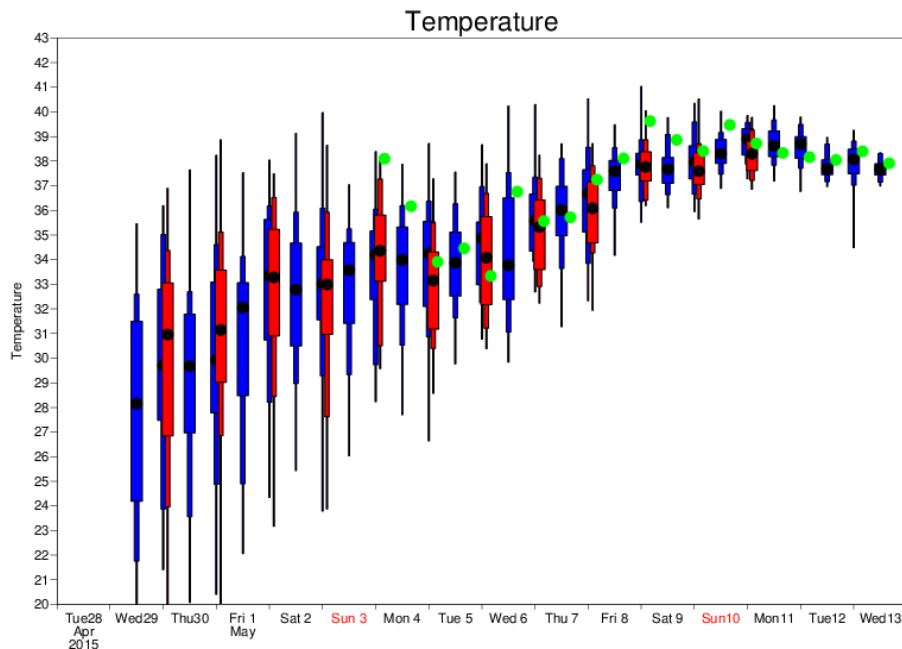


3.3 ENS

EFI for maximum temperature 13 May

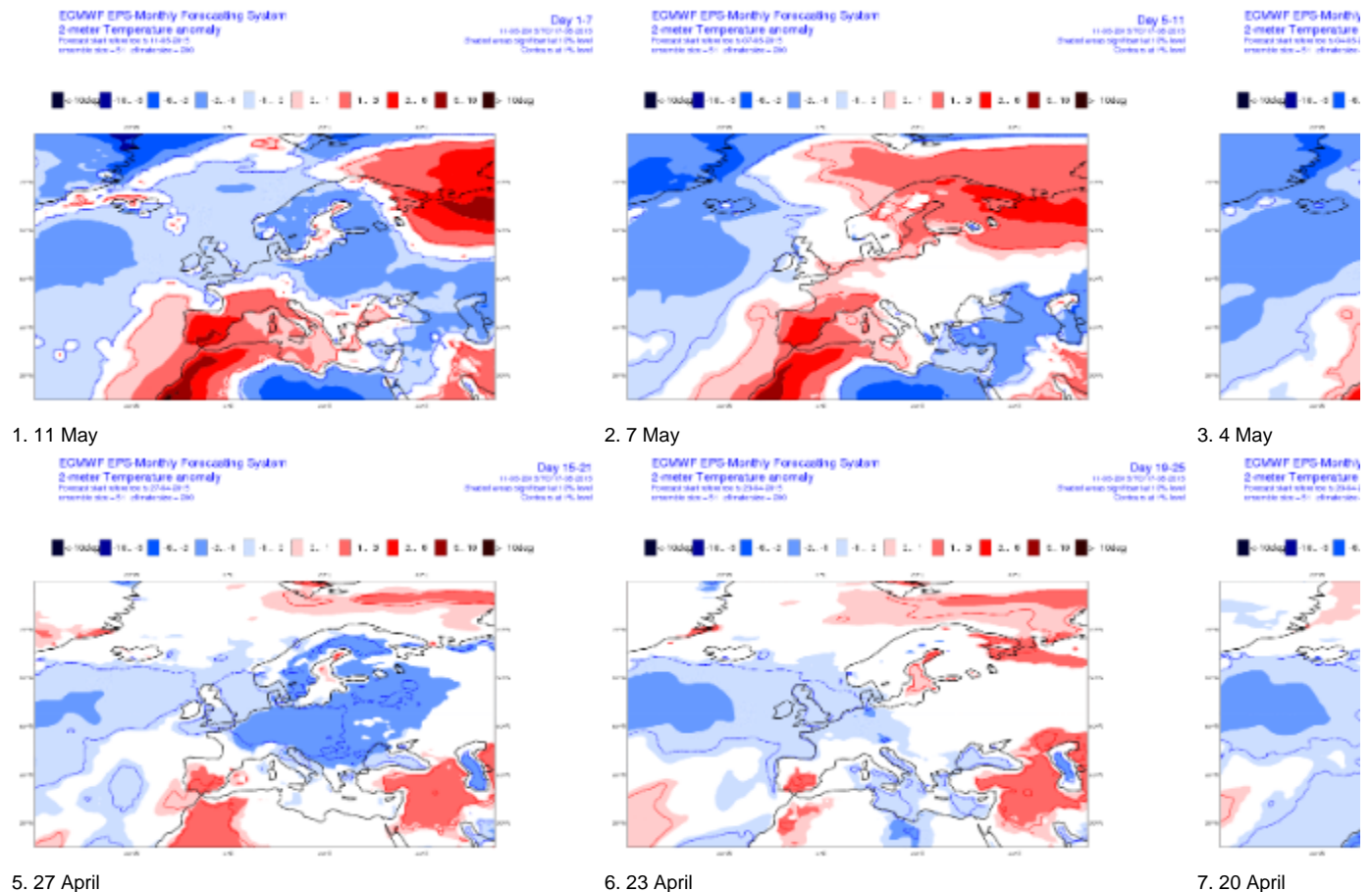


The plot below shows ensemble forecasts of 6-hour maximum temperature (12-18z) for Seville valid to 13 May. Blue bars represents o-suite and red e-suite. The green dot is from the HRES e-suite. The observed maximum temperature was 40.8C. The median maximum temperature is about 25C.



3.4 Monthly forecasts

Weekly mean of 2-metre temperature



3.5 Comparison with other centres

4. Experience from general performance/other cases

5. Good and bad aspects of the forecasts for the event

6. Additional material