



EGUsphere, referee comment RC2  
<https://doi.org/10.5194/egusphere-2022-813-RC2>, 2022  
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## **Comment on egusphere-2022-813**

Anonymous Referee #2

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Referee comment on "The extremely hot and dry 2018 summer in central and northern Europe from a multi-faceted weather and climate perspective" by Efi Rousi et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-813-RC2>, 2022

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### **General comments:**

Firstly, I congratulate the authors for a very well organized and presented manuscript. It must be noted that it is not always easy to summarize and present such a multidisciplinary work, spanning different approaches, and the authors were able to provide this in a very clear and organized way, and furthermore, in a relatively concise way, which is also not easy. The quality of the writing is very good, thus very clear for the reader, and the text avoids being too "heavy", so being easy to follow.

The manuscript is well structured, with the Abstract and Introduction stating in a clear way the motivation and objectives of the work. The same is valid for the Methods, which are presented in a sound way, providing, as said before, a clear structure of the work flow, despite the complexity of the multidisciplinary approach.

As a consequence, I believe the manuscript is very close to a format suitable to be published. Accordingly, I have just some small comments, which could enhance some small parts/sections. Besides that, I have only a few minor comments regarding one or two less clear sentences and/or typos.

### **Specific comments:**

- L58-60: While I understand the idea in this sentence, I find it presented not in the best way. I would probably suggest the authors to be more specific regarding this specific event.

- L286: How did the authors estimate the impact and potential loss of confidence from regridding the ERA5 data?

-L309-311: Why this specific timeframe?

- Regarding feedbacks between soil moisture deficit and heatwave amplification, while the presented material and evidence is in my point of view more than sufficient for this multidisciplinary approach, I would probably appreciate some more discussion on the soil desiccation mechanisms, and the approaches/methodologies to address this relatively complex subject, which have for example been very well discussed (e.g. 2010 European HWs) in works such as the ones from Miralles et al. (2014), or Schumacher et al. (2019).

- L430-434: I understand the local/regional description, however this may be somehow slightly misleading. I am not sure if extreme heat and temperature records in NW Iberia related with the advection of a Saharan air mass could or not be completely defined as "regional". In particular, the role of the advection of desertic air masses (associated with ridge activity) for Iberian heatwaves has been discussed in Sousa et al (2019).

#### **Minor comments:**

- L467 (and other instances): "warm conveyor belt"

- Fig.6 seems a bit too stretched vertically

- L547/551: I suggest adding here in brackets the period considered for ERA5 and "recent climate"

- L618: has warmed  $\sim 2^{\circ}\text{C}$  since when / compared to?

- L662: please put the mentioned UK record into context (very briefly of course, dates, etc.)