Weather Clim. Dynam. Discuss., referee comment RC2
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Comment on wcd-2022-45

Anonymous Referee #2

Referee comment on "European heatwaves in present and future climate simulations: a Lagrangian analysis" by Lisa Schielicke and Stephan Pfahl, Weather Clim. Dynam. Discuss., https://doi.org/10.5194/wcd-2022-45-RC2, 2022

This manuscript addresses an important topic in a novel and informative way. The presentation is clear and the methods appear sound. I have a couple of comments:

- It is difficult to assess whether the changes projected by the model are significant. Some measure of statistcal significance of the change values is needed for at least some of the analyses. The maps in Figures 8-13 would especially benefit from this.

- Figures 15-21 could be condensed to a subset of the figures. Part of the challenge is the multiple subregions, which I do see value in including in each analysis. However, I don't think all of the information presented in these figures is necessary as the results tend to show similar conclusions in diferent ways.

-The authors use the 2022 London heatwave to conclude that warming is following the RCP8.5 trajectory. I would suggest mentioning some caveats here. For one, there is growing evidence that emissions are deviating from RCP8.5. Also, using a single event could be a little misleading on assessing a trend. I do think putting this event into context, however, is helpful.