

# ***Interactive comment on “Hindcast regional climate simulations within EURO-CORDEX: evaluation of a WRF multi-physics ensemble” by E. Katragkou et al.***

## **Anonymous Referee #2**

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Interesting paper on validation of small ensemble of WRF simulations performed by the different settings of the model physics, based on EuroCORDEX experiments participating groups. Well written and elaborated validation, with aim to show the importance of analysis of other than standard parameters like mean temperature and precipitation and eventually to provide methodologies for model improvement. While the validation itself is really well done and biases or problems well described, however, I would expect in addition to certain comments of processes interaction effects in radiation discussion, especially toward the temperature issues, a bit deeper discussion, which, as my opinion, again especially with respect to the radiation and temperature connections, would had to lead naturally to involvement of other than standard parameters,

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i.e. monthly mean daily temperature maximum and minimum. Concerning the model improvements or settings, perhaps some more recommendations could be formulated in the conclusions. Other minor, but still quite important issues from the list following requiring the attention, are the effects of the other individual model choices, and the problem of interpolation of the model results into low resolution grid.

p. 6632, l. 19 perhaps CMIP5 reference Taylor et al., 2012

p. 6634, l. 6-9 two sentences on about the same

p. 6635, l. 14 isn't it rather EOBS in  $0.44^\circ$  resolution, by the way, should be here as E-OBS?

p. 6635, l. 27  $0.75^\circ$

p. 6636, l. 1-2 effects of the individual choices discussion, both review here and comments when individual variables discussed (in addition to SST for AUT)

p. 6636, l. 3 shouldn't be abbreviations or acronyms explained in the Table legend as well?

p. 6636, l. 19 rather perhaps  $0.44^\circ$  ...

p. 6636, l. 22 such an interpolation I see as a source of errors. Going from resolution  $0.44^\circ$  to  $2.5^\circ$  (as this is a "measurement" resolution I would prefer rather aggregation to the low resolution grid?

p. 6636, l. 27 spin-up or spin up (the same way, please)

p. 6638, l. 23 missing in the References

p. 6639, l. 16 I can see only Cattiaux et al. 2010 or 2012 in References

p. 6640, l. 22 I can see only Cattiaux et al. 2010 or 2012 in References

p. 6641, l. 2 here this is rather Taylor 2001 as in References

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p. 6641, l. 4-13 when seasons are analysed for temporal agreement, does it mean that just mainly interannual variations reproduction dominates on the results? Should be declared ...

p. 6643, l. 5 rather full Garcia-Diez ...

p. 6644, l. 6 missing in the References

p. 6644, l. 13-23 the same as for temperature, just mainly interannual variability?

p. 6645, l. 18 surface downwelling SW and LW really measured by satellite? Rather retrieved, of course, with certain degree of uncertainty

p. 6648, l. 3 some comments on how the WRF postprocessing produce the total cloudness (or cloud cover) with respect to the overlapping. This might be a source of significant errors for radiation computation as well.

p. 6665, Fig. 2 I would appreciate the same (and higher resolution) of the NSD scale

p. 6668, Fig. 4 better resolution on Y-axis, line legend enough in one panel where it fits the best with minimum overlap, this way to much “empty” space

p. 6669, Fig. 5 as for Fig. 2, no matter if some point will slightly run out of correlation scale circle

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Interactive comment on Geosci. Model Dev. Discuss., 7, 6629, 2014.

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