Natural Hazards
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Discussions

Interactive comment on "Fire weather index: the skill provided by ECMWF ensemble prediction system" *by* Francesca Di Giuseppe et al.

Anonymous Referee #1

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The authors present an assessment on the skill of the GEFF system in forecasting fire danger up to 10 days ahead. The system uses as proxy for fire danger the FWI index predicted from the ECMWF 10-day forecasts. The authors use FWI computed from a number of SYNOP observations as well as the ERA5 reanalysis as a substitute for weather observations.

It is my opinion that this work is important as it well documents the system and in general highlights its strengths and weaknesses in terms of deterministic as well as probabilistic forecasts. The use of the "standard" GFED4 regions for comparison is a good idea, even if they encompass large regions with heterogeneous fire regimes.

I recommend it for publication with minor reviews pending the following suggestions are addressed.

C1

- p. 3 section 2.2.1 - the text is a direct copy of other works, should be summarized with a reference to the original work

- p. 4 line 107 - using the era5-base reanalysis without proper validation is a bit problematic. Key findings should be summarized here.

-section 3.1 (last paragraph) - The system is worse than climatology for the 2 South American regions, authors omit this and do not postulate any reason for this poor performance

-section 3.1 - due to a poor spatial coverage of SYNOP stations in tropical areas, I suggest the analysis be done with ERA5 data as a proxy for SYNOP, and results provided in supp. material

Some general remarks and comments:

- p. 2 line 40 - authors ignore the uncertainty in initial state which can also lead to forecast error

- p. 2 line 57 - authors should mention that the configuration used for the ensemble forecasts is done at lower spatial resolution

- p. 5. line 134 - I would suggest replacing "era5 simulations" with "era5 reconstructions" here and elsewhere.

- p. 5. line 138 - replace "quality of the computation" with "quality of the forecast"

- p. 9 line 199 - replace "Boreas" with "Boreal" (also in the last paragraph of the text.

- p. 13 line 265 - replace "signal extend" with "signal extends"

- p. 15 line 277 - replace "predictive skills" with "predictive skill"

- p. 15 line 277 - add "for most of the GFED4 regions studied" after "predictive skill"

- p. 15 line 278 - fix reference format

- p. 15 line 283 - also the FWI was developed for Boreal forests which might explain its better performance in those regions

C3