

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2
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Comment on nhess-2021-226

Anonymous Referee #2

Referee comment on "Development of a forecast-oriented kilometre-resolution ocean–atmosphere coupled system for western Europe and sensitivity study for a severe weather situation" by Joris Pianezze et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-226-RC2>, 2021

- I suggest to homogenize the way you present the references to used upstream data. For example, introducing ECMWF IFS instead of simply IFS (ln. 123) or global-IFS (which I guess it is the same). IBI is also cited as IBI36: better to use one unique reference.
- the user may not know what IBI is. I see you added correct references, however since your model is focusing on a different implementation (since the spatial domain is wider) I suggest to remove in Section 2.2 the specification of where the IBI boundary was or simply specify why you are proposing this new spatial domain more clearly.
- you refer to CMEMS many times. It would be good to introduce it once, at the beginning, and cleaning the paper from redundant references like in Section 4.1.1 ln. 261-262.
- It is clear you decided to split presentation of results between validation and evaluation of impact. The impression I got is that in the evaluation of the OA model, the explanation can be a bit confused since you present also forced experiments in the plots: in fact, in the second part of the section where you present the impact of OA coupling, you use the previous plots and explain it. I would focus on discussing evaluation of the OA coupling system directly when you describe the impact, so something like this:
 - 4.1 Validation and evaluation of OA coupling on ocean forecast highlighting if and how OA improves skills wrt forced system
 - 4.2. Impact of OA coupling on the atmospheric forecast
- ln. 141-143: could you please specify the dataset/reference you used for the river runoff?
- ln. 236: which bulk are you using in the OCE-ifs? It would be nice to specify them.
- ln. 261-263, the SST L3 you are using is missing the reference: could you add it? I think you are using SST daily at night-time and not SST daily average observation: is it?