

Comments on the study:

Simulating the connections of ENSO and the hydrology of the Blue Nile using a climate model of the tropics. Written by Zaroug et al

The paper is very well organized with five main sections:

- An introduction in **section 1**
- Tools and data in **section 2**
- Validation of the simulations of the climate model in **section 3**
- Analysis of the correlations between the ENSO and the climate for the Blue Nile region from the observations and from the simulations in **section 4**
- A conclusion in **section 5**

The paper mainly described the main connections between the Nino 3.4 SST and the climate condition over the Blue Nile region. This is a good paper and it worth to be published in HESS after some revisions to improve the manuscript. My specific comments on the paper are as follow:

1. The topic of the study is very interesting because it addresses the connections between the large climate system and the local land surface processes through the hydrology. However, the results presented in the study are fare away from the hydrology of the Blue Nile. There is any description of the Blue Nile hydrological regime in the study. I find that the study addresses the connections between the ENSO and the climate regime over the Blue Nile region. The two sections of the results are:
 - Validation of model climatology over East Africa;
 - ENSO Connections with East African Climate.Thus, there is any section on the ENSO connection with the hydrology of the Blue Nile basin. The hydrology of the basin should be analyzed at least through the discharge data. Hence, my proposition is to change the title of the study by “Simulating the connections of ENSO and the rainfall regime of the upper Blue Nile region using a climate model of the tropics”.
2. The last sentence in the abstract, ”We thus propose that observations as well as model forecasts of Pacific SST during this season should be used in seasonal forecasting of the Blue Nile flow” is the same with the last sentence in the abstract of another study (Zaroug et al., 2013) done by the authors. It’s curious that two different studies ended with the same conclusion. As I have said before, it’s very pretention to talk about the Blue Nile flow in the abstract. My proposition is to said, ”We thus propose that observations as well as model forecasts of Pacific SST during this season should be used in seasonal forecasting **of rainfall over the Blue Nile region**”.
3. Another issue in this study is that the analyses are based on the averages on the 9 ensemble members of the simulations. The problem here is that the mean data cannot be attributed to the physic of the climate model because they are processed data. The best way is to make the analysis for each ensemble member and then found the most relevant runs that can be used for the connections analysis. From that, you can explain why the connection is weak or good for some runs. The add-value of this paper should be the explanation of these differences between the 9 ensemble members in the connection between the ENSO and the climate of the Blue Nile region.

4. In section 2, specify the differences between the 9 ensemble members. Are they different in the lateral boundary or in what?
5. Page 2233, line 13: Seasonal forecasting of the Blue Nile flow. For which season? Please, specify the months?
6. Page 2235, line 6: specify the period covered by the data used in the study of Amarasekera et al. (1997).
7. Page 2236, line 17: our instead of **out**
8. Fig. 1. Add the names of the oceans on the figure
9. Fig. 2-8. Add the box of the study area on the figures
10. Page 2239, line 9: of the
11. Page 2240, line 26: to capture
12. Page 2243, lines 3-4: the 5 El Niño years (1982, 1983, 1987, 1992, and 2002); Please clarify the statement made on the period of the oscillation of about 4 yr in page 2234 line 26.
13. Page 2242, lines 9-13: please put the maximum and the minimum correlation coefficient or the nine values that you have gotten from the nine ensemble members.

Reference

Zaroug, M. A. H., Eltahir, E. A. B., and Giorgi, F.: Droughts and floods over the upper catchment of the Blue Nile and their connections to the timing of El Niño and La Niña Events, *Hydrol. Earth Syst. Sci. Discuss.*, 10, 10971–10995, doi:10.5194/hessd-10-10971-2013, 2013.