

Interactive comment on “Spatio-temporal trends in the hydroclimate of Turkey for the last decades based on two reanalysis datasets” by Mustafa Gokmen

Anonymous Referee #1

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The author analyzed two sets of reanalysis data (ERA-Interim & ERA-Interim/Land), with regards to hydro-climatic variables. The author found that the two reanalysis data have similar patterns over the Turkey, in terms of changes in air temperature. However, for other hydrological variables, the two reanalysis do not have consistent performance. Such kind of assessment of reanalysis products is very much welcomed by the communities. This may help different end-users to understand that the choice of certain reanalysis data is important, as different reanalysis data can lead to different findings and lead to different decision makings. Nevertheless, few concerns arose after reading the manuscript. I suggested a major revision before the further process of this manuscript.

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Major concerns: 1. It seems the author used annual value of different hydro-climatic variables to assess the trend and magnitude. On the other hand, certain variable can show strong seasonal behaviors, for example, precipitation. Perhaps, it would be much more useful to investigate precipitation at monthly scale or seasonal scale. Other than that, at different temporal scales, the hydro-climatic variables may have different errors. How these errors addressed before the analysis over the Turkey is not clear.

2. For air temperature, the author used only 11 in-situ stations to compare with reanalysis products, while for precipitation, only 8 in-situ stations used. However, in the text, the author indicated that there are at least 249 stations. I am wondering if it is possible to get those data and interpolate these in-situ observation to get the gridded product of air temperature and precipitation.

3. For some other variables, you may not have in-situ observation. However, you do can find satellite observation products, for example, for SWE and ET. For runoff, you may find data from GRDC. Without the third independent dataset, it is hard to get the real value of either set of reanalysis data in terms of representing the long-term changes.

I've also attached minor comments in the PDF.

Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/hess-2016-23/hess-2016-23-RC1-supplement.pdf>

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