

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 #3

Received and published: 19 March 2016

The author explored the long-term trends in several hydro-climate variables, in a spatially distributed manner, based on two reanalysis datasets (ERA-Interim and ERA-Interim/Land) in Turkey. This kind of research can provide information particularly for the researchers who are interested in the study area, and is therefore welcomed by the community. However, I have to point out this manuscript does not show very much a perspective that would attract the attention of the readers/researchers who are interested in other regions. Therefore, I would suggest that a major revision is required before it can be considered publication in HESS. My major concerns are listed as follows:

1. The author focused on the hydro-climate variables (i.e. air temperature, total precip-

[Printer-friendly version](#)

[Discussion paper](#)



itation, snowmelt, ET, surface runoff). I wonder why the author selected those variables and ignored others? Whether analyzing those variables is enough to help the author show his/her perspective? I am not very clear. For example, soil moisture is also an important variable, and why the author is not interested in it? Moreover, why the author ignores base flow, which is an important component of runoff?

2. The discussion is not deep enough. The author may explain the trends of the variables based on physics for instance. Are those trends of the variables reasonable? Is the phenomenon in Turkey unique? Is there any suggestion? For example, Figure 3b shows the distribution and the histogram of the average temperature increases (over study period) with respect to elevation. Why? Please discuss. I would suggest the author to have a more comprehensive discussion.

3. As pointed out by the Anonymous Referee #1 and # 2, the seasonal variations should be considered since it may strongly affects the intra-annual trends.

4. The author stated “while over land, ET is mainly water-limited (i.e. precipitation and soil moisture) especially for semiarid regions. ” This statement is not right since, in some humid regions, ET is energy-limited and there are many humid regions over land. For more information, please see the article “Seneviratne, S. I., T. Corti, E. L. Davin, M. Hirschi, E. B. Jaeger, I. Lehner, B. Orlowsky, and A. J. Teuling (2010), Investigating soil moisture–climate interactions in a changing climate: A review, *Earth-Science Reviews*, 99(3–4), 125–161.”

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2016-23, 2016.