Interactive comment on "65-year changes of annual streamflow volumes across Europe with a focus on the Mediterranean basin" *by* Daniele Masseroni et al.

Anonymous Referee #1

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The manuscript describes a large trend analysis of annual streamflow volumes recorded in European countries. The topic is surely interesting and the manuscript is pleasant and easy to read. While this kind of papers is generally useful for the scientific community, they usually include a common drawback present also in the submitted manuscript. Indeed, a lot of pages focus on results and conclusion while few details are given for the most important part of the paper that is the data selection and description.

In the following the main points that should be clarified, are listed.

1) Line 100. "characterized by about 1.200 points of measure per year" . This sentence is not clear. As a consequence it is not clear how the annual streamflow volumes are

estimated.

2) Lines 107-110. The human activities in the river basin can significantly affect the trend, so it is not clear if a specific check on the time series was done. Specifically, a matching between analysed watersheds and dams could be helpful to understand if " the degree of disturbance can be tolerated". How many watersheds include a dam in it? When it was built? Etc. etc.

3) Fig. 2 is not fully clear o better an additional figure could be added showing the distribution of the time series length. Indeed, it is not clear if all the analysed series have the same length (from figure 2a it does not seem). Fig. 2b could be enriched by some statistics like the min and max contributing areas.

4) Are the times series autocorrelated? And how much? This could affect the trend results and tests.

5) The definition of Mediterranean is confusing, for sure it is an "official" characterization, however looking the figure 1 I see around 300-400 points that can be considered as affected by Mediterranean climate. For instance, all the basins located in the Alps at high altitude can be considered as Mediterranean? As well as all the basin around Portugal?

6) The comparison with Rainfall and Temperature should be better described. Which is the time series length used in the rainfall and temperature analysis? Is it correct to compare trends of data set with different length ?

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