Reply document

Dear prof. María J. Polo,

We want to thank for the efforts, time and patience in following the revision of this manuscript.

We followed your two critical points to complete definitively the work.

1. From the reading of the manuscript, I can conclude that a common time window for the analysis was chosen, that is the period from 1950 to 1963, and that all stations with more than 2 years of gaps in the time series for such period were removed (i.e., the final 3485 stations provide at least 61 years of flow records). Could you confirm this is correct? If this was not the case, please, could you state clearly in the text (section 2.1) that, despite a common time window in your analysis for the flow time series, not all the stations provide full-length series during such period, and add a short paragraph in the discussion commenting on the potential consequences of this on the interpretation of results?

We confirm the interpretation. Then, we inserted the statement into section 2.1 as suggested.

"The application of quality control and homogeneity tests led to discard 428 series of data. Thus, 3,485 stations providing at least 61 years of flow records, were selected and assembled into a dataset that guarantees the best balance between the necessities to investigate a dataset as large as possible (which covers a large part of the continent and a nearly complete period of analysis), and to detect a historical variability."

Moreover, we inserted a comment for discussing the consequences of this choice.

"Results found that in 95% of the European gauged stations (i.e., 3,310 stations) the MK test confirmed the presence of a trend in annual streamflow volumes. In general, 70% of positive and 30% of negative trends in annual streamflow volume anomalies is recognized, with clear positive trend in northern regions and negative trend in southern ones, as shown in Fig. 5. These results are certainty representative of the selected time window, despite not all gauged stations provide full-length series during the same period, because the data selection leads to maintain a trade-off between record length and spatial coverage over the continent, meantime to remove those limited by wide time-series gap or evident uncertainties/inconsistencies."

2. Despite it can be assumed from the text that you are analyzing annual streamflow per area, it is more accurate to use volume/area/(time.time) as the units of the change of this variable over time. Please, I strongly recommend to use these units instead of just volume/area/time.

We accepted the suggestions and modified the unit of measure in the entire manuscript and in all figures.