

Interactive comment on “Streamflow droughts in the Iberian Peninsula between 1945 and 2005: spatial and temporal patterns” by J. Lorenzo-Lacruz et al.

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Title: Streamflow droughts in the Iberian Peninsula between 1945 and 2005: spatial and temporal patterns

Dear authors

This paper provides a solid study of the spatial and temporal characteristics of streamflow droughts in the Iberian Peninsula using long-term river flow records. I used the word “solid” as the methods are scientifically defensible, the data sources are comprehensive and reliable, the results are presented well, and conclusions are supported

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by analysis and consistent with previous studies.

General comments

1. Although it's declaimed (by the authors and others) that SSI was comparable spatially and temporally as it's the Z-Score of a time series, it does depend on the length of the dataset (subsets of a record with different periods have different means and standard deviations, resulting in different SSI). The origin SPI suffers less from this if the record is long enough (e.g. 30 years), as it's arguably acceptable that 30 yrs is long enough to be “representative”. However, stream flows can be dramatically reduced or increased following river regulation. Therefore, the relative lengths of the investigated time series falls in pre-/post-regulation eras might have large impact on the resultant SSI. Suggestion: check the raw time series to ensure that the stream flow records have similar proportion of the records before and after river regulation.
2. Information and data in Figure 7 could be more clearly presented in a table.
3. Why use the thresholds of -0.84 and -1.65 to define drought and severe drought? Why not -1 and -1.5 by Mckee et al. (1995)?

Specific comments

1. P8064 line 17-18: “Among natural hazards drought is the most damaging and affects more people than any other one (Obasi, 1994) . . .” This is quite subjective although referenced. Could be “Drought is one of most . . .”
2. P8066, line 13: There is a general. . .
3. P8066, line 24 – 25: Suggest deleting “in relation to the drought response of particular catchments.”
4. P8067, line 13: “using a long-term dataset”
5. P8070, line 9: delete “among”

6. P8070, line 10-11: "Once $F(x)$ (the cumulative distribution function) is identified, the SSI (in z-scores) can easily be calculated. . ."
7. P8071, line 16-17: "... level that does. . . records are. . ."
8. P 8077, line 5 – 7: delete the sentence "In Fig. 6. . ." as it repeats the Figure legend
9. P8079, line 19: what's "concrete catchments"? and P8086, line 12 "concrete months"
10. P8080, line 27 – P8081, line 5: very long sentence, suggest revising
11. P8081, line 17: associated with
12. P8082, line 26: . . .generates greater differences. . .
13. p8083, line 2: "Following completion . . .", A new paragraph, in line with the next one.

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