

Interactive comment on “Sensitivity of water balance components to environmental changes in a mountainous watershed: uncertainty assessment based on models comparison” by E. Morán-Tejeda et al.

Anonymous Referee #2

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General comments

The main aim of this study is to evaluate the sensitivity of the components of the water balance to changes in climate (2021-2050 horizons time frame) and land-use in a Pyrenean watershed using two hydrological models: SWAT and RHESSys.

The paper is written in well and clear English.

The bibliography is complete, up-to-date, and of international broad.

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Thought the use of two models is appreciated but needs further justification. In fact, one of the selection criteria is “the need of two models of differing conception and purpose” . Further, you mention “The two models differ in the basic equations governing water partitioning and runoff generation, and this can be therefore the cause of possible differences in the results obtained from the analyses” ?.

In page 11997, it was mentioned that “C4I and SHMI present poorest performance”. Why did you continue using them ?

It is recommended to add quantitative figures either in the Abstract and the Conclusion.

Specific comments

In the title: correct the word ‘senstitivity’

P11987 L17: Why the reservoir is excluded from the study area ? (Is it situated downstream the gauging station ?).

P11987 L24-25: “.. lower values are registered ...” how much ?

P11991 L10-13: The application of Penman-Monteith method yielded results out of bounds. Is it linked to the method itself or to your available input data ?

P11993 L10-28 + Fig 1: What is the resolution/scale of the maps ?

P11994 L26: Why did you use 351 yr (spinup) ?

P11997 L5-6: “... show fairly good statistical agreement ...”. How much ?

P11998 L21: Why only here that you used ‘m.a.s.l.’ ?

P12004 L7: Replace ‘experiment’ by ‘run’

P12010 L17-19: What do you recommend to use with models when planning/implementing water policies ?

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