

Manuscript: Separating the effects of changes in land cover and climate: a hydro-meteorological analysis of the past 60 yr in Saxony, Germany

Major remarks

The authors applied methods based on the Budyko framework to separate the effects of land cover change and climate change in observed time series obtained in Saxony within 1950-2009. A very interesting result of the study is the agreement/consistency of observed changes associated to land cover change with forest damage data! But some modifications of the paper are required before it may be published. In agreement with the other two reviewers, the method used has to be described more thoroughly, especially the argumentation and definition that climate changes are perpendicular to the original aridity index and the apparent symmetry mentioned on p. 8542 –line 14.

In summary, I suggest that the paper may be accepted for publication after major revisions have been made.

Minor Comments

In the following suggestions for editorial corrections are marked in *Italic*.

p. 8539 - line 19
... *adaptation* ...

p. 8541 - line 6-12
Please provide section numbers when referring to the different sections of the paper.

p. 8545 - line 8 and other places (e.g. line 8549 – line 20
... “Erzgebirge; *Fig. 2*).

Don’t use the uncommon “..., cp. *Fig. X*”. Just write in brackets ... (*Fig. X*).

p. 8545 - line 25
... *state’s* area ...

p. 8547 - line 17
... have been *produced*, ...

p. 8549 - line 7-8
Sentence is doubled. Please remove!

p. 8549 - line 16
...) *and* increasing ...

p. 8549 - line 17
As visible *from Fig. 3c* ...

p. 8552 - line 10

... forest *and* agricultural ...

p. 8560 - line 14

It is written: ... coherence of this signal ...

Which signal? The sentence before is about uncertainty, which is not a signal. Please clarify.

p. 8572 – Fig. 2

The Saxony border is difficult to see. Please use different colour. The cake diagrams for each station partially comprise three colours, but a legend is only provided for two (Agriculture, Forest).

p. 8573 – Fig. 3

The axis tick mark values are strange and a unit is not provided. I suggest using longitude/latitude in degree. The basin boundaries are not visible in panel a) and b).

p. 8575 – Fig. 5

I don't see any grey lines as described in the caption. I don't see any dotted green lines as given in the figure legend. Please improve figure.

p. 8579 – Fig. 9

The blue dots in the inlay map are not described in the caption. Why there are also dots outside of Saxony? Are they also used in the study? If not please remove them.