

## ***Interactive comment on “Interaction of valleys and circulation patterns (CPs) on small-scale spatial precipitation distribution in the complex terrain of southern Germany” by M. Liu et al.***

**M. Liu et al.**

min.liu@iws.uni-stuttgart.de

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### General comments

We thank very much the reviewer for his positive comments and suggestions on improvement, which we will follow during the revision. The reviewer has pointed out some formatting and language problems which will be corrected before next submission. The main concern of the reviewer is the description of the procedure of valley identification, which we will amend with a figure.

### Detailed comments

1. The title is a bit long and we have tried different versions and found it is hard to get a concise and precise one. The suggestion of the reviewer sounds well, and we will take it.
2. We will add here the reference to Fig.4 to make the description more tractable.
3. We will add here the reference to Fig.5 to this place make the description more tractable.
4. Yes, in the original paper of the CP classification, the WI is scaled, so we follow this convention. This is a small typo which we will correct in the revision.
5. Yes, we will add WI to make the table more readable.
6. Yes, we will provide a sketch to demonstration the trial-and-error process.
7. How about “Exceptional cases, such as station EC in Fig. 7c which the spatial rainfall pattern doesn’t follow the assumption, may be caused by very site specific geographical and meteorological conditions, and is beyond the scope of this paper.”
8. Sorry for the overseeing, we will add it.
9. We will reformulate it.
10. Yes, citation from a software manual is not proper, so we will refer to some textbooks.
11. In this manuscript, we have just taken an experiment using smoothing to get the surrogate elevation, i.e. to consider the average height of points in the 2.5km upstream and 2.5 km downstream in the CP direction as the surrogate elevation. This is just an arbitrarily chosen range, which we think to be reasonable. In a following-up research, we are considering this issue more in details. Here, we just want to show there IS an improvement.
12. We will make the tables consistent.

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13. We will enlarge the text in the figures.
14. This is the average bias of each station, mm/day.
15. We will follow the convention and redefine the bias.
16. The gray background will be removed.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 14163, 2012.

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