

## ***Interactive comment on “Aggregation in environmental systems: catchment mean transit times and young water fractions under hydrologic nonstationarity” by J. W. Kirchner***

**T.A. Bogaard (Editor)**

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Dear author,

you received two in-depth and detailed reviews for which I thank the reviewers. The paper is commented as a significant contribution to catchment hydrology and I agree. The paper logically follows on the companion paper (part 1). Compared to the first paper, this one is more difficult to follow due to its large amount of results presented and discussed.

The paper contains very interesting results (reviewers do not dispute any of the find-

C3474

ings being worth discussing, although have some suggestions for extra explanation), however, I do think this paper is quite 'full'. So the focus of the paper becomes less clear and discussions more widespread. This can be solved in different ways: selecting the most interesting results for the paper, moving some minor findings to an appendix or splitting the paper in two (adding a third paper). I prefer the first option. This does not shorten the length of the paper but it does help the reader to stay focused. So I agree with the suggestions of Markus Weiler, especially moving sections 2.1-2.2, 3.3, shortening 3.6 and the summary and conclusion section. I agree with the author the extensive figure captions are useful and a good communication strategy. It is the final choice of the author to split in two papers or shorten the main text by moving some material to an appendix.

It is not necessary for this paper to add an analysis on evaporation influence nor more benchmarking analysis or test the approach on real-world data, I agree these both can (and most likely will) be done in follow-up analysis and discussions.

[As a sidestep, I agree with having the sensitivity analysis on the age threshold of Fyw in paper 1]

The paper(s) will undergo a second round of review.

I look forward receiving your resubmission in due time.

Kind regards, Thom Bogaard

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