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The paper is much improved (compared to the previous version which I reviewed) in terms of readability, and justification of the parameter estimation method. My remaining concern is the justification for the chain of manipulations made in section 2.3. The assumptions made are plausible and pragmatic, e.g.,

"the temporal distribution of catchment scale storage can be considered as a scaled version to that of the recession characteristic"

"the mean value of the sampled Λ's, Λ, represents the slope of recession in a state of mean storage in the catchment,"

"The water left in the soils, S_{SS}, at steady state (after J time intervals) and hence assumed to represent the mean storage"

However, a different assumption could have been made in every case, the alternatives are not considered, and only the first of the three listed here is later discussed. As a result it is difficult to know whether all of the choices made were critical to the success of the new model. At the very least, I think the authors should list in the discussion any assumptions which have not been tested.

Specific points

P2 "A single linear reservoir is, however, too simple for describing the variability and non-linearity of hydrological response." Please cite some references for this.

P6 18 "In the current version of DDD, MM is a calibrated parameter and is divided into storage levels, i," Are these equal-sized intervals?

P6 19 "which are all assigned different wave velocities, or celerities". Are these the linear reservoirs arranged in parallel referred to above? If yes, it would help to use the same terms to describe the same thing.

P7 15 "The distance distributions (Figure 2)" Which catchments are these?

P11 8 "If we assume that the mean value of the sampled Λ's, Λ, represents the slope of recession in a state of mean storage in the catchment" Why is it reasonable to assume the mean recession rate occurs at the mean storage?

Eq 17: Si appears on both sides of this equation – is that correct? Is it really an integral equation which must be solved?

P17 L23 "the distribution of Λ remains quite incentive to" change incentive to insensitive