

Responses to the reviewers' comments

New Title : On the regional-scale variability of flow duration curves in Peninsular India
MS No. : hess-2023-178 [Hydrology and Earth System Sciences]
Authors : Pankaj Dey, Jeenu Mathai, Murugesu Sivapalan and Pradeep. P. Mujumdar

We deeply appreciate the Editor, along with the two anonymous reviewers and Dr. Chris Leong, for meticulously evaluating our manuscript and providing insightful feedback to enhance its quality. Their constructive comments have significantly contributed to refining the manuscript, resulting in an improved version. We have attentively addressed each reviewer's comments and incorporated the suggested revisions in the updated manuscript. The line numbers mentioned in this document are referred to the *track-change* version of the manuscript. We sincerely thank you all for your invaluable contributions.

Anonymous Referee #1

Comment: I think the paper has largely improved as compared to the original version. The authors have clearly done a huge effort to restructure the paper (thank you). I think the content is now presented in a fairer and clearer manner, and the paper could be accepted for publication in HESS. Scope limitations and value of the presented study are now better defined. I indicate some minor pending issues below.

My only suggestion for additional improvements concerns the presentation. I think the intro does not follow a clear logic path as the authors go back and forth between the state of the art and the research gap / novelty of the study. I suggest to modify the order of some statements to help the reader to follow the reasoning of the authors from the state of the art to the research novelty / question (e.g. shouldn't lines 189-201 be moved earlier?). Likewise, I think methods / results / discussion are not clearly separated (e.g. lines 465 -473 are not methods!). The quality of the Figures is sufficient but could be further improved. The abstract does not have a standard format (definition of the problem, relevance of the problem, methods and main results + perspectives) and is quite long.

Response: Thank you very much for your thoughtful feedback and kind words regarding the revised version of our paper. We deeply appreciate the recognition of the extensive effort invested in restructuring the manuscript. Your expertise and constructive criticism have been instrumental in refining the quality of our work, and we are truly grateful for your input.

In response to your insightful feedback, we have taken steps to enhance the clarity and coherence of our paper. Specifically, we have reorganized the content to ensure a smoother transition for the reader. This involved relocating the literature review section (Lines 188-213) to precede the explanation of the novel aspects of our paper (Lines 175-189), thereby facilitating a more seamless progression from background research to our study's unique contributions.

Moreover, we have revisited the citations and phrasing within the manuscript to better align with the flow of information. For instance, we have rephrased certain sentences to convey the intricate relationship more effectively between recession parameters and FDC characteristics, drawing on insights from studies by Botter et al. (2013), Muller et al. (2014), Basso et al. (2015), Arai et al. (2021), and Leong and Yokoo (2022; 2019). This refinement aims to underscore the crucial influence of recession parameters on hydrological systems and highlight our examination of the connection between MGD parameters and landscape properties through recession analysis.

Furthermore, we have updated the abstract of the paper to provide a clearer overview of its contents, emphasizing key elements such as the problem statement, relevance, methodology, significant findings, and their implications.

We express our heartfelt appreciation once more for your invaluable contributions to the enhancement of our paper. Your feedback has played a crucial role in shaping its final iteration.

Referee #2: Dr. Chris Leong

Comment: The abstract needs to have some key findings/results mentioned. It focusses too much on the explanation of the novelty.

Response: Following the recommendations provided, we have revised the abstract to incorporate the highlighting of the problem statement, relevance of the problems, methods, key results, and their implications, thereby achieving a more equitable portrayal of our research. Thank you once again for dedicating your time to reviewing our manuscript and offering constructive criticism.

Anonymous Referee #3

Comments: I can see that the authors have responded all my comments. I am satisfied with them all except for the revision in Introduction where the novel/new part of the paper is explained. The authors have moved from the literature to the novelty of the paper and then to the literature again (see three paragraphs in Lines 167-187 where the novelty is explained, and Lines 188-213 where literature is reviewed).

Furthermore, to me, the novelty of the paper is over-explained in these three paragraphs. It seems that the third paragraph (Lines 182-187) is repeating the first paragraph (Lines 167-173), and the second and third paragraphs (Lines 174-187) are more like discussion of the novelty.

As a solution, I would suggest the authors to (i) bring the literature together first (move Lines 188-213 up to come before Line 167), and (ii) explain the novelty of the paper (three paragraphs from Line 167 to Line 187) in one single concise paragraph. Upon acceptance of the paper, formatting would be needed.

Response: Thank you for bringing your concerns to our attention. We acknowledge the points you raised regarding the organization of the Introduction section. We have reorganized it by moving the literature review section (Lines 188-213) to precede the explanation of the novel aspects of our paper (Lines 167-187), ensuring a smoother transition from the literature review to the specific contributions of our study. Additionally, we have condensed the discussion of the novelty of our manuscript into a more concise single paragraph (lines: 175-189), aiming to better streamline the presentation of our key contributions.