

Interactive comment on “Optimal depth-based regional frequency analysis” by H. Wazneh et al.

Anonymous Referee #1

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The paper presents a new methodology for regional frequency analysis (RFA) that applies the concept of data depth to improve the results of classical methods of RFA for hydrological variables and thus obtain more robust estimates of design events quantiles for large return periods.

The paper introduces into the topic of RFA and understandable way and outlines the newly developed DBRFA approach in a very detailed way. This part of the paper could be streamlined a little bit but is of very high quality - no major change required.

My three main comments relate to how the case studies demonstrate the advantages of the newly-developed approach. In my opinion the paper does not emphasize the advantages of the new DBRFA methodology in a sufficient way.

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1.) The paper should clearly outline that the criteria already introduced in section 3.2. can also be used as KPI to compare different RFA methodologies. Thereafter typical ranges for a mean, good and very good estimations should be defined. This would create the basis for a better assessment of the results of the case study.

2.) The case study compares the new approach with only one other classical RFA method. A comparison with further approaches would increase the credibility of the case study.

3.) The results of the case study should be discussed in a more comprehensive way.

Besides these minor issues the paper is very interesting and this worth publishing.

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