Hydrology and Earth System Sciences Discussions

Interactive comment on "Regional-scale identification of groundwater-surface water interaction using hydrochemistry and multivariate statistical methods, Wairarapa Valley, New Zealand" *by* M. R. Guggenmos et al.

Anonymous Referee #1

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First of all, congratulations for this article. I found it very interesting as I once worked on a similar topic. Moreover, the introduction to the case study as well as the hydrogeologic description are very complete. The description of the statistical methodologies used for this work is also very well explained and comprehensible. All data management steps are clearly explained and justified as well. Figures are also correctly referenced with their corresponding scale and north arrow when necessary. Finally, conclusions are properly justified. As a general overview, it is an interesting article very

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clearly explained.

Regarding some specific questions, I would have liked more explanation about the results of the PCA analysis, to see with more detail the process of determining the number of components that where sufficient to describe the dataset (for example, showing the scarce variance explained by a third component or any other criterion used to dismiss the use of extra components). On the other hand, it would also be interesting to know if results were compared using different statistical packages (SPPS/R/...) as results may differ slightly depending on the algorithm used.

Finally, there are some small typing errors or comments on figures that will remarked in the next comment, with a commented pdf of the article attached.