

## ***Interactive comment on “Predicting natural streamflows in regulated snowmelt-driven watersheds using regionalization methods” by D. Kim and J. Kaluarachchi***

**Anonymous Referee #1**

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The paper addresses a scientific area of great significance for scientific and operational hydrology. Predictions in ungauged is also the subject of the comprehensive new book "Runoff Prediction in Ungauged Basins" edited by Blöschl, Sivaplan, Wagener, Viglione and Savenije (IAHS 2013). It would be natural to refer to the main findings and conclusions from this work.

The description of how the FDC method is used is a bit difficult to follow.

Some comments on deterministic models can be challenged. Contrary to what is stated on page 9437, line 21, they generally do not have high requirements on data. Snow

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distribution is mostly not an input variable, but is modelled implicitly or explicitly from meteorological data. Most conceptual operational models for mountaineous areas apply some kind of area-elevation and vegetation zoning and sometimes also statistical distribution of the snow storage within elevation zones. It is a limitation that a simplified Tank Model was used in this study, without these options (page 9446, line 5), which probably would increase the performance of the model substantially.

Against the above background it is hard to generalize the results as concerns the performance of the FDC method in relation to that of a more complete Tank Model or any standard conceptual hydrological model in use today. They are normally more advanced than the one used in this study. This is a rather big limitation of the study which should be better reflected in its conclusions.

The scales and readability of some of the figures should be given more attention. In particular figures 3, 4 and 5.

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