Hydrology and Earth System Sciences Discussions

Interactive
Comment

Interactive comment on "Geostatistical radar-raingauge combination with nonparametric correlograms: methodological considerations and application in Switzerland" *by* R. Schiemann et al.

Anonymous Referee #2

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General comments. The paper presents an interesting and thorough study where different approaches to estimate a spatial covariance structure functions for estimation of hourly precipitation using a combination of radar and rain gauge observations. The authors conclude that kriging with an external drift using radar data to estimate nonparametric correlogram show better performance than radar fields or fields interpolated from rain gauge observations only.

The presentation is clear and concise. The authors show good understanding and overview of both data and the applied methods, and I find the presentation very in-

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structive.

I recommend that the paper can be accepted for publication in HESS after responding to the comments and questions below.

Specific comments In the introduction I miss a (short) discussion on the challenges associated with the non-Gaussian and non-continuous structure of precipitation, and relate it to the choice of approach. This comment also address the last sentence of section 3.1 where I would like an explanation on why OK should be less able to distinguish between wet and dry areas than pure radar data.

Section 2.1: What is the station density (or size of the study area)? That is interesting when discussing the length of spatial covariance functions.

The authors appear to apply 0.5 mm/hour as distinction between wet and dry. This can be a significant precipitation intensity. Please explain why this threshold is applied.

Section 2.2.3: A minor issue: What are the practical (operational) implications for the correlograms underestimating sill and range when it is the closest data points that will have the largest influence on the estimates? I would expect differences at short distances to be of more interest.

Technical corrections. p. 6938, line 12. loactions, should read locations. p. 6945, line 12. Whe, should read We.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 6925, 2010.

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