



Which do you trust more: a radar echo 3km above your head or a raingauge measurement 8km away?

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Neither present raingauge networks nor weather radars provide accurate real-time high-resolution precipitation fields. Both types of observations are prone to large uncertainties, especially in a mountainous region such as the European Alps. Gauge-based estimates of precipitation fields suffer from the high spatial natural variability of precipitation, while radar scientists are faced with severe beam shielding and strong ground clutter. This paper presents an objective comparison of the accuracy of the two types of estimates of precipitation fields over the Swiss Alps.

First, we summarise 10 years of progress in operational radar precipitation estimation in the Swiss Alps including an objective large sample assessment of the residual uncertainty. Second, we estimate the uncertainty in raingauge precipitation fields by investigating the spatial variability of precipitation as seen by radar. Finally, we compare radar and raingauge uncertainty and determine the distance between the point of interest and a gauge beyond which radar is to be preferred. The analysis is done for different types of precipitation, different accumulations times and different topographic regions.