



Merging radar data and raingauge observations: example of application

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The estimation of rainfall fields, especially its spatial distribution and position, is a crucial task both for rainfall nowcasting and for modeling catchment response to rainfall. Previous studies have suggested that discharge estimations are improved when radar and rain gauge data are combined to estimate input rainfall fields. A recently proposed merging algorithm is the so called Conditional Merging (CM), which makes use of an interpolation technique to extract the optimal information content from the observed data. This work reports an application of CM in North-Western Italy with several elements of innovation. Over this area are both available a dense network of raingauge measurements and a C-band polarimetric weather radar located at Monte Settepani. The main innovation respect to classical CM is on the estimate of both the structure of semivariogram and the length of spatial correlation λ directly from the cumulated radar rainfall fields. An application to several test cases together with evaluation of algorithm performances are presented and discussed.