GRISO: Rainfall Generator of Spatial Interpolation from Observation

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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. In the past was made several studies on the spatialization of rainfall from raingauge and many methods was invented. The most known one belonging to geostationary family is the Kriging (Matheron, 1967). The new algorithm GRISO is similar to Kriging so the output map maintains the observed "real" rainfall value on the raingauges position but is conditioned to reach the mean of the field far from the gauges. The main innovation is the improved computational time, the associated map of variance and above all the possibility of using more than one semivariogram for spatialize the informations.
The area of application is Italy, where is available a dense network of raingauge measurements (about 4000 stations). An operative use and a validation respect to the kriging are presented and discussed.