High resolution climatology
- towards climate change services

Mapping rainfall variability using different GIS interpolation techniques over Siret Basin

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The analysis of spatial variability of precipitation processes has a major importance for water resources planners and managers, the precipitation data being important for many applications in hydrology or agriculture that determines the availability of drinking water and the level of the soil moisture. It is very important to have adequate information about precipitation and its spatial distribution and variability, not only at local scale but also over a specific region or territory.

Spatial interpolation methods are techniques that predict the value at a given location by using values from sample points (meteorological station). A key difference among these approaches is the criterion which is used to weigh the values of the sample points. These criteria may include simple distance relations (e.g., inverse distance methods), minimization of variance (e.g., Kriging and co-Kriging techniques) and minimization of curvature or enforcement of smoothness criteria (Spline interpolation).

The main aim of this study is to demonstrate the importance and the implementation of different GIS interpolation techniques for the spatial interpretation of mean annual precipitation for the Siret basin: to test and evaluate the accuracy of different GIS interpolation methods; to compute and compare the average of mean annual precipitation for Siret basin using GIS tools.