

GIS-based interpolation of weather generator

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CaliM&Ro project focuses on interpolation of spatial analysis of selected weather generator (WG) parameters which were abstracted from the observed time series of 125 stations of the Czech Hydrometeorological Institute. By now, we have tested GISbased methods (with the stress on kriging and cokriging), neural networks and the nearest neighbours method (Dubrovsky et al., EGU 2006; Dubrovsky et al., ECAC 2006). The aim of this paper is using the different GIS-based interpolation methods for the spatial analysis of WG parameters: kriging (kriging methods rely on the notion of autocorrelation as a function of distance), IDW (Inverse Distance Weighted – each input point has a local influence that diminishes with distance) and spline (spline method fits a minimum-curvature surface through the input points). Due to its effect on various climatic characteristics, an altitude was found to significantly improve the quality of the interpolation. Specifically, in the GISbased interpolation, the altitude was used as an additional explanatory variable in cokriging. The spatial analysis concerned four months (January, April, July and October). Comparison of results of these methods and values of WG parameters were carefully discussed.

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