Interpolation of weather generator parameters using GIS

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CaliM&Ro project is focused on calibrating a stochastic single-site daily weather generator (WG) Met&Roll for sites with non-existent or incomplete historical daily weather series. The calibration of the generator for the ungauged station, which will allow to generate observed-like synthetic weather series for such site, may be based on interpolation of WG parameters from the surrounding stations. This presentation will focus on interpolation of selected WG parameters with a stress on parameters of the precipitation sub-model: parameters of the Gamma distribution used to model daily precipiation amount, and transition probabilities of the Markov chain model used to model precipitation occurrence series. The parameters will be interpolated using several techniques involved in ArcView program, the regression-based interpolation technique will be included for a comparison. The tests will be based on observational data from several tens of stations in the Czech Republic. The performance of individual interpolation techniques will compared.