Seasonal variation of rainfall variogram parameters in The Netherlands

R. van de Beek, H. Leijnse, P. Torfs, and R. Uijlenhoet
Hydrology and Quantitative Water Management Group, Wageningen University, The Netherlands

We present a geostatistical analysis of rainfall based on one full year of data from a high-resolution network of 30 tipping bucket rain gauges (at 25 locations) over an area of 15 x 15 km in The Netherlands. Careful quality control reveals that only 10 gauges have functioned properly and without interruption during the entire year. Empirical mean semi-variances are determined for time intervals from 5 min up to one day. These are subsequently fitted with spherical variogram models with time-varying parameters. The parameters are found to exhibit a pronounced seasonality, which we try to link to the climatology of precipitation over The Netherlands.