Geophysical Research Abstracts,
Vol. 11, EGU2009-4215, 2009
EGU General Assembly 2009

Interpolation and uncertainty assessement of daily precipitation using a copula based approach

A. Bardossy, G Pegram, and C Haslauer

University of Stuttgart, Institute for Hydraulic Engineering, Stuttgart, Germany (bardossy@iws.uni-stuttgart.de, +49-(0)711-68564681)

The interpolation of observed point precipitation is of great importance for hydrological modeling. Different kriging approaches are often used to obtain densely gridded estimates. The mixed discrete-continuous distribution of precipitation amounts makes this problem extremely difficult. In this paper a copula based approach is presented. It allows the measurement conditioned assessment of the multivariate distributions. Uncertainty estimates are obtained for different spatial scales. The treatment of zero values and the dependence of extremes is discussed. Different copula models are shown and compared. Daily precipitation amounts from South-West Germany are used to illustrate the methodology.