



## **Are rainfall fields pairwise structured?**

Jhan Rodriguez-Fernandez and Andras Bardossy

Universität Stuttgart - Institut für Wasserbau, Abt. Hydrologie und Geohydrologie, Pfaffenwaldring 61, D-70569 Stuttgart, Germany, jhan.rodriguez@iws.uni-stuttgart.de

In many environmental sciences, multivariate statistical models and methods are customary, the multivariate Gaussian and Student models being two standard options for this kind of modeling. They share the common feature that their dependence or association structure is "pairwisely determined" (PD) through a Covariance matrix that intends to describe every possible PAIRWISE association among the variables under study. In this poster we explore the adequacy of PDs models for hydrological variables such as daily rainfall (at several locations) and daily discharge (at several locations). Local approximations to the empirical copula and entropy are employed as means for analysis. The results point to a systematic sub-estimation of association among variables on the part of PDs, even if they are locally adjusted, which calls for further investigation.