



Exploiting the link between daily rainfall network rainfall and circulation patterns for futures scenarios

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It is not seasonality, so much as wetness on a day (quantified by the proportion of gauges in a network reporting rain), that conditions the amount of rain falling over the area covered by raingauges. The degree of wetness has been linked to atmospheric circulation patterns (CPs), which were objectively quantified, using fuzzy logic and simulated annealing, in both Europe (Germany and UK) and South Africa. By collating a plausible sequence of the identified CPs, an ensemble of possible rainfall events can be generated. The origin of the plausible sets of CPs can be one of the following: historical; those generated using Markov chains; those produced by regional Climate Models (RCMs) embedded in Global Circulation Models (GCMs). The presentation describes and demonstrates the linkages between CPs and rainfall, reports a split sample test on the historical validation data and suggests some future trends based on GCM-based, RCM generated, daily CPs.