



## **Hydrological drought characteristics in catchments: to what extent are they reproduced by regional climate models?**

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Land surface schemes and large-scale hydrological models have been compared mostly with observed streamflow records from large basins that aggregate small-scale hydrological variability. However, high-resolution regional climate model output is now becoming more readily available and hence more likely to be used and interpreted at smaller scales, relevant for example for hydrological process studies and catchment scale drought management. The streamflow data set of the recently updated European Water Archive (EWA) includes recent droughts such as in summer 2003 and hence provides the opportunity to test the limits for such use. For this purpose we identify suitable benchmark statistics to compare observed characteristics of hydrological drought with those from flow-constituting variables of the 0.12 degree resolution European re-analysis performed for the EU-WATCH project (by DMI with the HIRHAM5 model). We present results for different regions in Europe testing to what extent

- (a) drought events in the meteorological and hydrological variables occur simultaneously in space and time and
- (b) the distribution properties of drought characteristics are comparable.

Regional differences in the comparability of RCM simulated hydrological drought with observations from catchments may allow to classify the relative importance of competing influences of climatic drivers and local catchment storage on drought and low flows.