



Supplement of

Enhancing the usability of weather radar data for the statistical analysis of extreme precipitation events

Andreas Hänsler and Markus Weiler

Correspondence to: Andreas Hänsler (andreas.haensler@hydrology.uni-freiburg.de)

The copyright of individual parts of the supplement might differ from the article licence.

Supplementary material:



5

Figure S1: Upper three panels: Distribution of the fraction of (a) cumulative occurrences of individual radar cells in the final sample; (b) the distance of the sampled radar cells to the cell of interest. (c) Spatial distribution of the effective ensemble size. The distributions in a and b are for a single ensemble member, while the error bars indicate the rather small variation among the five ensemble members. Lower Panels: Mean rainfall sum of the rank 1 to 10 events for two (60 & 1440 minutes) different event durations of the original RADKLIM data (left), and the resampled, but not corrected RADKLIM data (2nd left). The panels on the right hand side depict the minimum (2nd right) and maximum (right) of the ensemble generated through multiple variations of the sampling parameters.



Figure S2: Magnitude of 1yr design storms for four different event durations (15, 60, 360 and 1440 minutes, depicted in rows) and three different datasets (KOSTRA, BW-Stat, RAD-BC, depicted in columns). Additionally, the difference between BW-Stat and RAD-BC is depicted (right column). Note that in the BW-Stat dataset all values below/above the 5th/95th percentiles are set to the respective percentile value.



Figure S3: Magnitude of design storms with a return rate of 100 years for four different event durations (15, 60, 360 and 1440 minutes, depicted in rows) and three different datasets (KOSTRA, BW-Stat, RAD-BC, depicted in columns). Additionally, the difference between BW-Stat and RAD-BC is depicted (right column). In contrast to Fig. 4, RAD-BC is correct using a multiplicative bias correction approach. Note that in the BW-Stat dataset all values below/above the 5th/95th percentiles are set to the respective

20

percentile value.