Supplemental Material

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Supplemental Material for

Comparison and evaluation of statistical rainfall disaggregation and high-resolution dynamical downscaling over complex terrain

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Figures S1 to S3

Introduction

Figure S1 is created by resampling the 10 m digital elevation model to the 3 km grid of the WRF model to show the height differences of the WRF elevation grid and the real height above sea level of the rain gauges.

Figure S2 presents the frequency of distribution of the wet spell lengths per rainy day for every rain gauge to provide additional information about the performance at reproducing wet spell characteristics.

Figure S3 shows the timing of the maximum rainfall burst for every rain gauge in addition to the mean over all rain gauges, which is presented in the paper in figure 4a.
Figure S1. The digital elevation model resampled to the 3km resolution grid of the WRF setup shows the simplification of the complex terrain. Difference of elevation between the real height above sea level minus the height of the resampled elevation model is calculated.
Figure S2. Distribution of intra-day wet spells for every measurement site. Note the different scales on the y-axis, which were applied for visualization reasons. The grey bars represent the observational data, the green hollow bars the WRF modeled data. The 100 runs of the MoF are shown as boxplots with the boxes denoting the IQR and the red crosses denoting outliers, which are outside the whisker length of 1.5 IQR.
Figure S3. Percentage for the timing of the maximum rainfall burst per day within the four 6h-periods TIME1 – TIME4. The grey bars represent the observational data, the green lines the WRF modeled data. The 100 runs of the MoF are shown as boxplots with the boxes denoting the IQR and the red crosses denoting outliers, which are outside the whisker length of 1.5 IQR.