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Contribution of potential evaporation forecasts to 10-day streamflow forecast skill for the Rhine River

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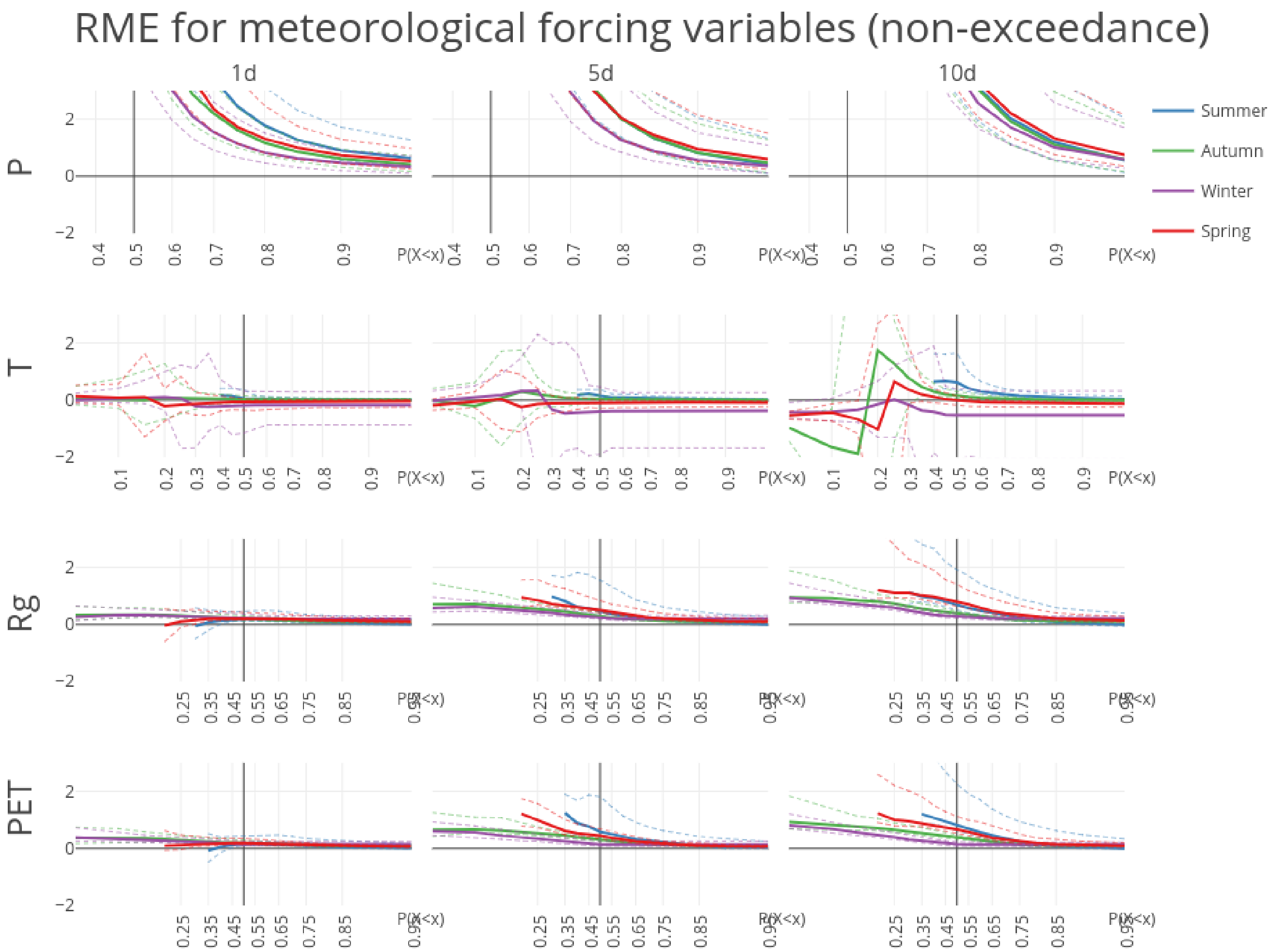

Figure S1. Relative Mean Error (RME) for the four forcing variables benchmarked against sample climatology for the 148 HBV subbasins for the whole year. RME is aggregated into mean (solid), 10th and 90th percentile (dashed). The CRPSS score at $P(X \leq x) = 0.1$ resp. 0.7 are calculated over respectively the 10% and 70% lowest observation-forecast pairs, conditioned on the observations. Note that radiation (Rg third row) is indeed overestimated for low extremes as presented in the main text. Additionally, the asymptotic behaviour of the RME of precipitation (P, first row) is caused by the large number of events with zero or close to zero precipitation, so that the relative error grows without bounds. In the inverse figure (for P(X>x), Fig. 6) those values were automatically excluded. For temperature (T, second row), the RME is unstable for values around zero, but since actual temperatures of exactly zero are rare, this remains within bounds, albeit with a jump from positive to negative due to sign differences between observed and forecasted values.

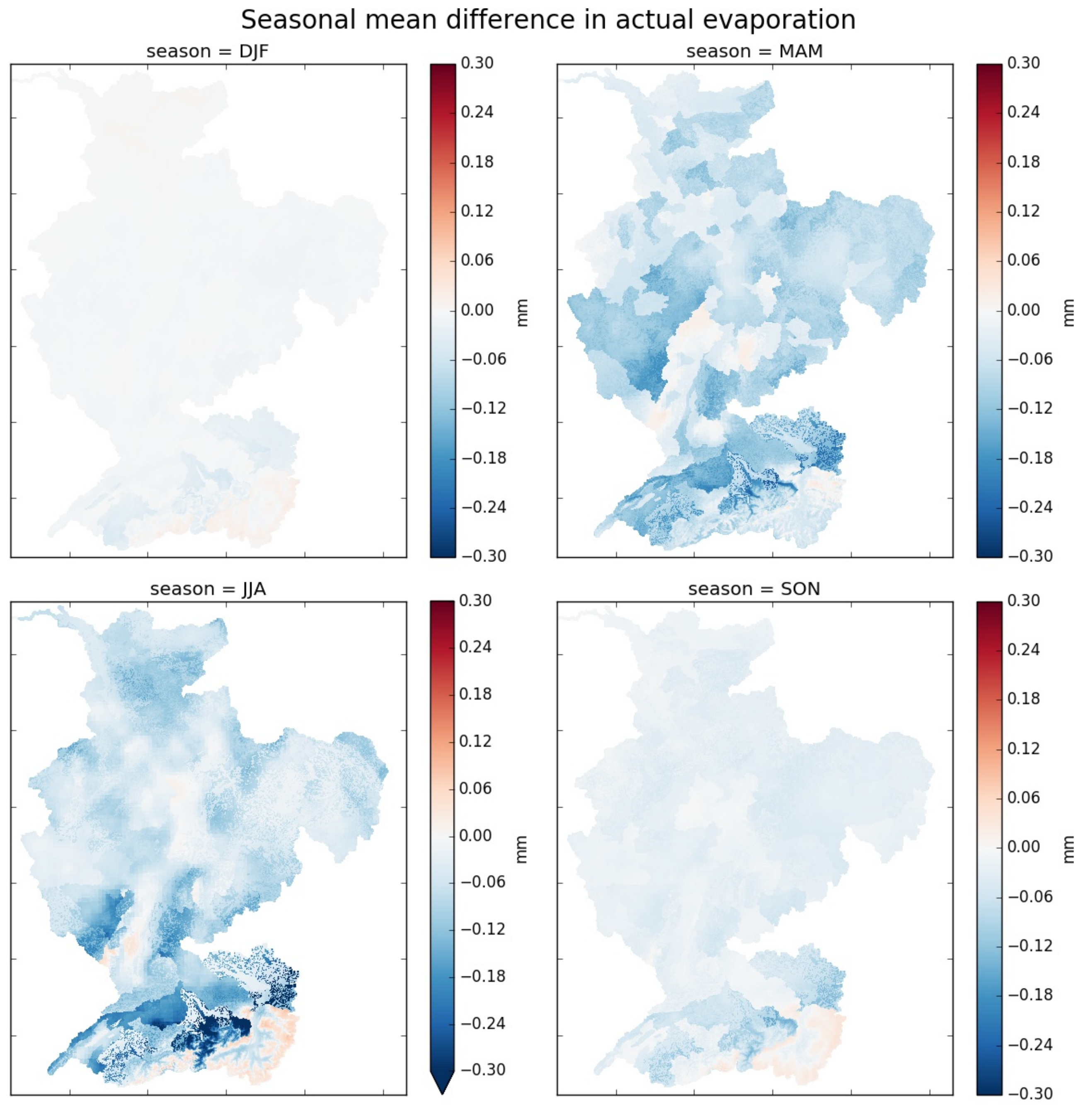

Figure S2. Seasonal Mean Difference in calculated actual evaporation (aevap) for each season. Actual evaporation includes evaporation from interception.

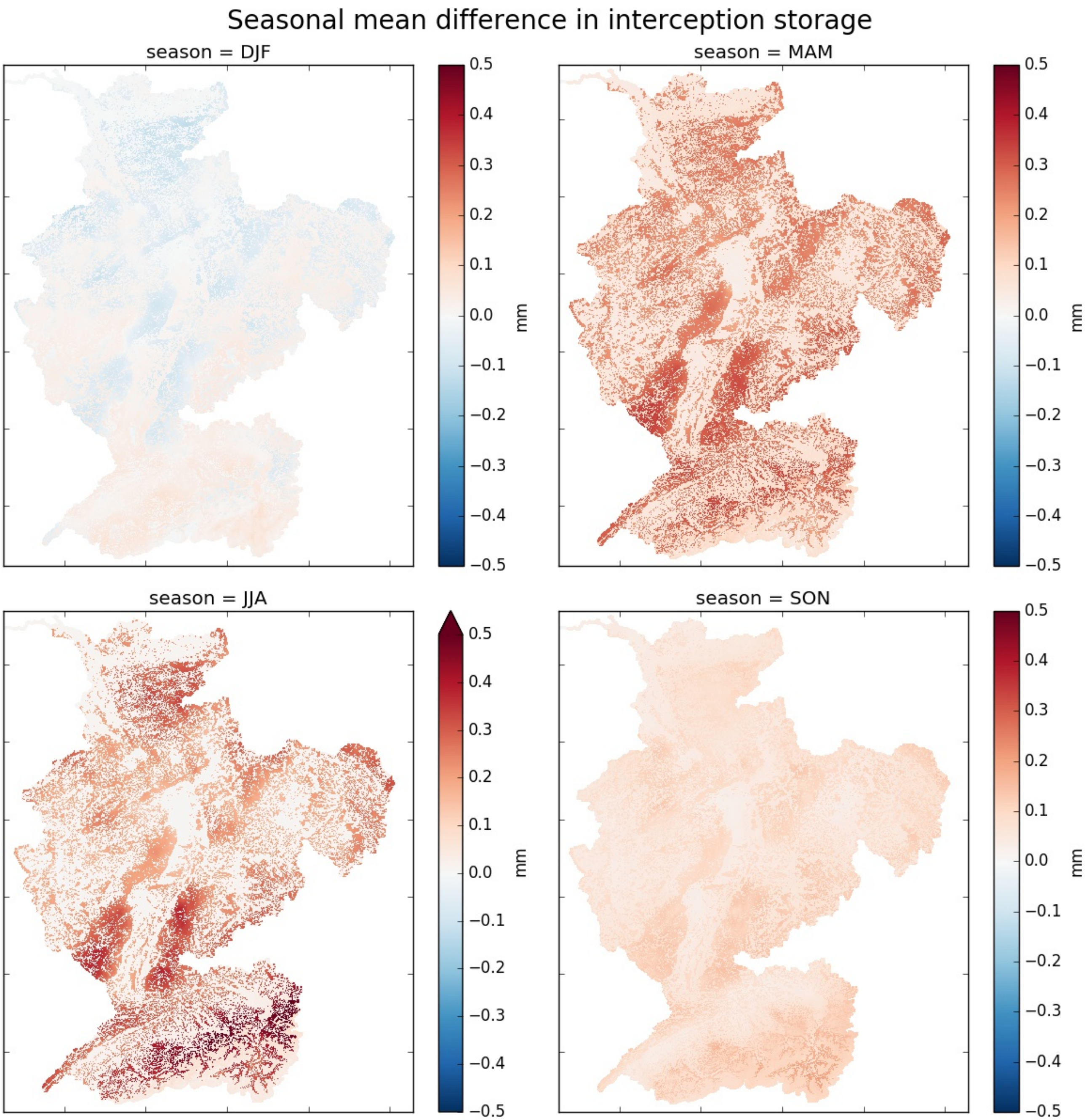

Figure S3. Seasonal Mean Difference in calculated interception storage (ic) for each season. This is not the average interception flux, but the average storage in the interception reservoir so that wetter interception stores means less interception.

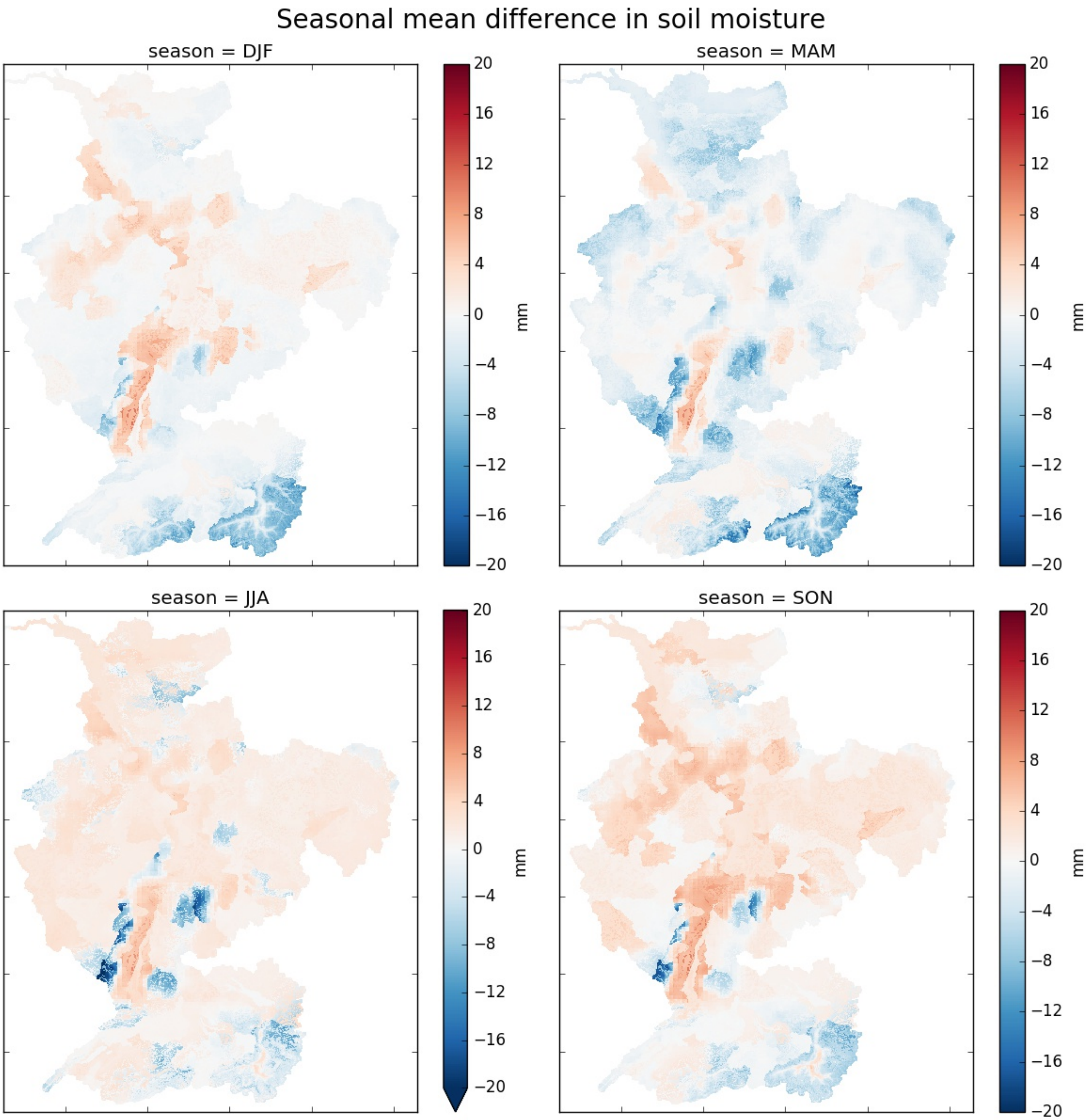

Figure S4. Seasonal Mean Difference in calculated soil moisture (sm) for each season.

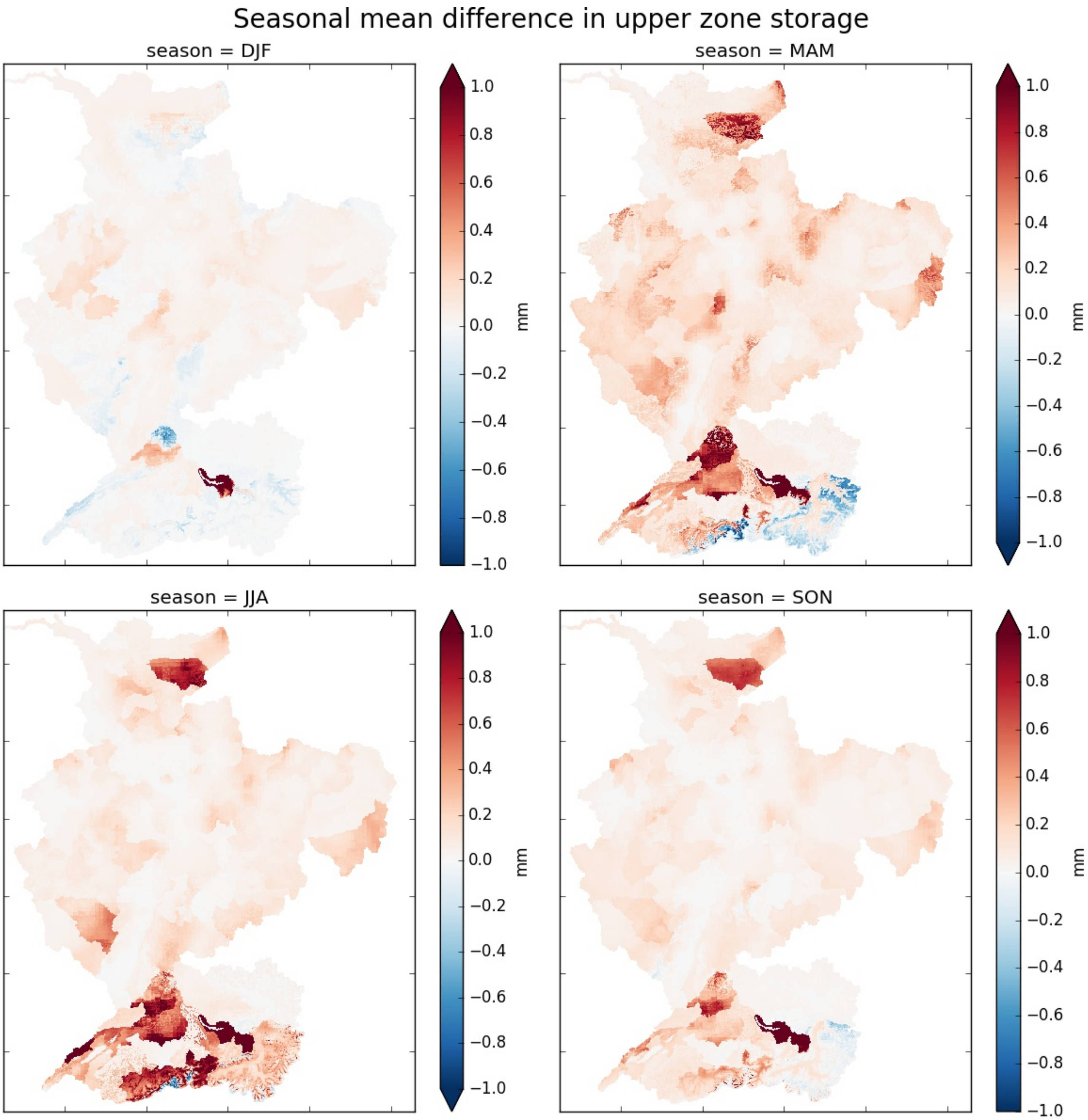

Figure S5. Seasonal Mean Difference in calculated upper zone storage (uz) for each season.

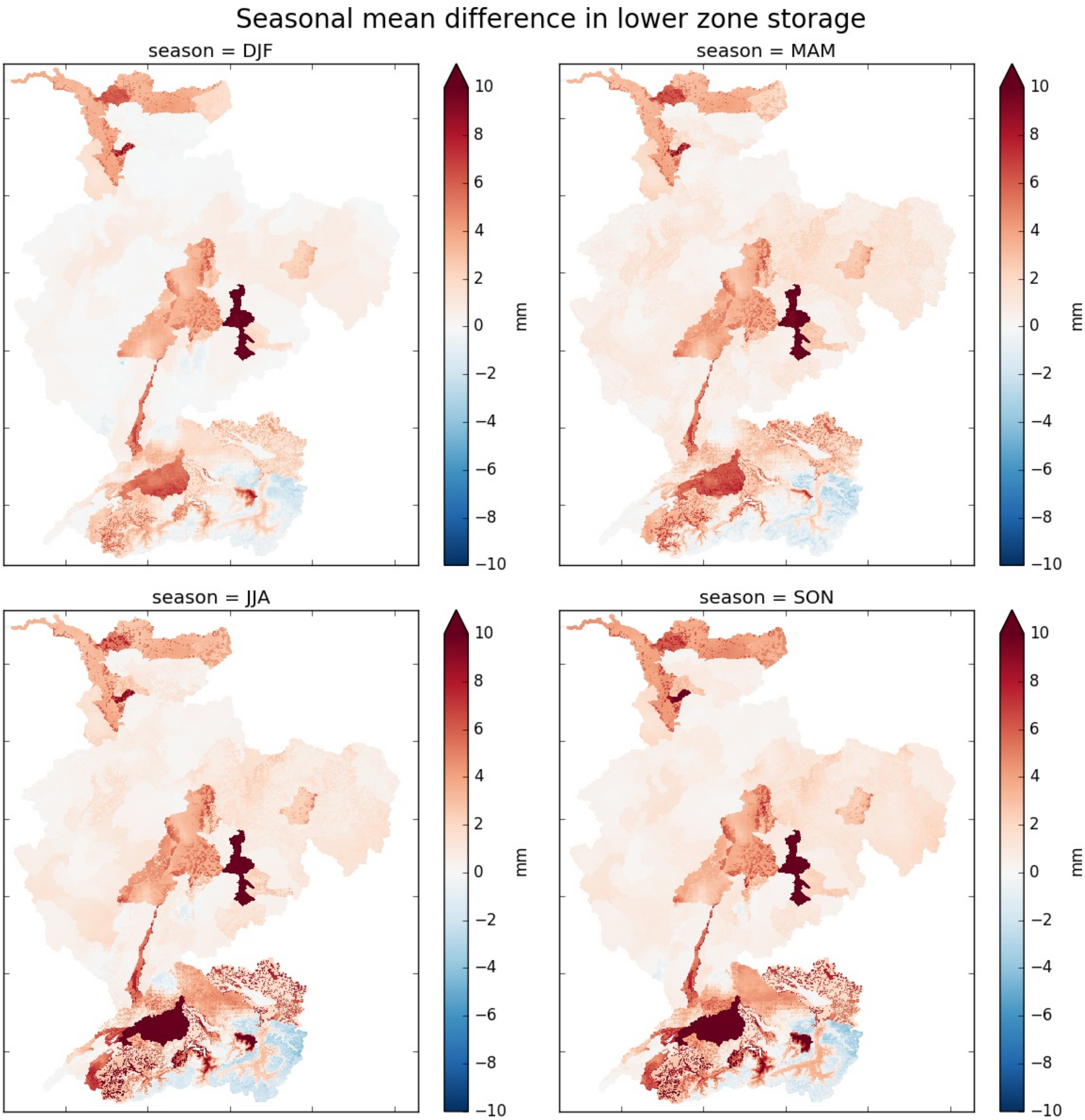

Figure S6. Seasonal Mean Difference in calculated lower zone storage (lz) for each season.

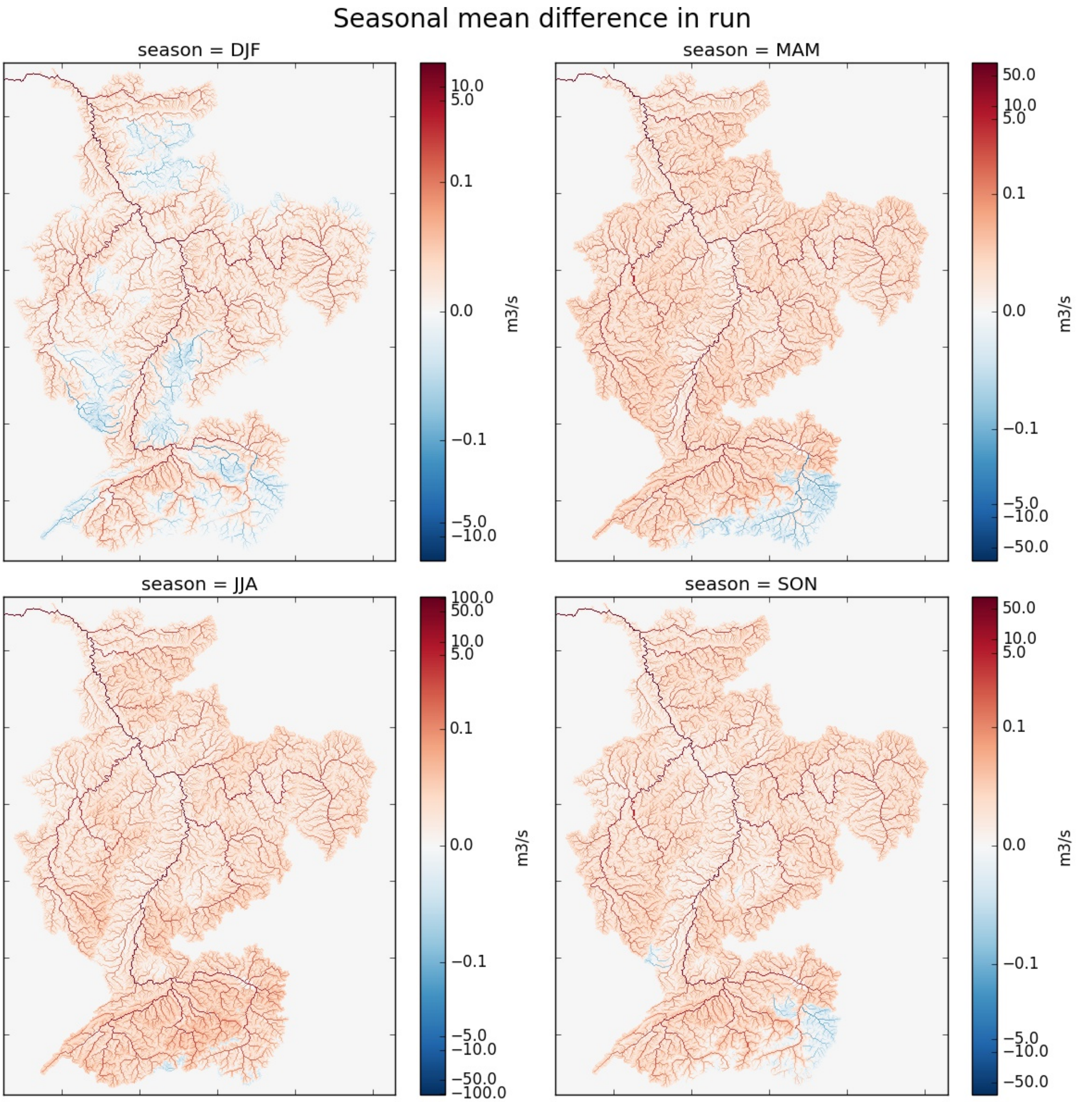

Figure S7. Seasonal Mean Difference in calculated discharge (run) for each season.