



Improvements to the gridding of precipitation data across Europe under the E-OBS scheme

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Gridded precipitation data are a valuable resource for analyzing past variations and trends in the hydroclimate. Such data also provide a reference against which model simulations may be driven, compared and/or adjusted. The E-OBS precipitation dataset is widely used for such analyses across Europe, and is particularly valuable since it provides a spatially complete, daily field across the European domain. In this analysis, improvements to the E-OBS precipitation dataset will be presented that aim to provide a more reliable estimate of grid-box precipitation values, particularly in mountainous areas and in regions with a relative sparsity of input station data. The established three-stage E-OBS gridding scheme is retained, whereby monthly precipitation totals are gridded using a thin-plate spline; daily anomalies are gridded using indicator kriging; and the final dataset is produced by multiplying the two grids. The current analysis focuses on improving the monthly thin-plate spline, which has overall control on the final daily dataset. The results from different techniques are compared and the influence on the final daily data is assessed by comparing the data against gridded country-wide datasets produced by various National Meteorological Services