



Assessing a global dataset of rainfall estimates from satellite over Spain

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Precipitation is a key component of the water cycle, therefore to improve the knowledge of its spatial and temporal distribution is important issue. The high resolution satellite-based global daily precipitation climate dataset PERSIANN-CDR (Precipitation Estimation from Remotely Sensed Information using Artificial Neural Network – Climate Data Record), provides the opportunity to assess the performance of satellite precipitation estimation over Spain. The PERSIANN-CDR dataset could be useful to force hydrological models as well as to evaluate the reliability of climate models. However, an assessment of the performance of the PERSIANN-CDR dataset against in-situ observations is necessary. The high-resolution gridded daily rain-gauge dataset over Spain, named Spain02, is employed in this study. Several variables and indices are considered for the evaluation: annual precipitation, annual cycle, rainfall dry spells, rainfall wet spells, maximum annual rainfall, among others. The time period selected corresponds to 1988-2007, with 0.25° spatial resolution. The assessment is based on distributional similarity and the well-known statistical test of Smirnov-Kolmogorov of two samples being used as fitting criteria. The results demonstrate the good performance and robustness of PERSIANN-CDR over the whole of Spain for more critical dry spells. Although some limitations are identified and discussed for the other analyzed variables.