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ACRE: Mediterranean daily precipitation and 20th Century Reanalysis

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The Mediterranean region is characterized by high degree of complexity, mainly due to several processes (e.g. subtropical, midlatitude dynamics) acting at different spatial and temporal scales. Therefore, the analysis of climate and climate change, especially in terms of extremes, is challenging and needs both dense observational networks and reanalysis products. In this frame, a set of more than 400 daily precipitation time series has been collected and quality checked by applying novel techniques. Inhomogeneities have been detected and series affected by more than two break points discarded. The northern part of the Basin shows a good coverage, except some coastal areas (e.g. western Italy), whereas north Africa is unrepresented. This dataset has been used for the identification and characterization of extreme precipitation events that led to severe impacts on the economy and society. The influence of large scale atmospheric circulation at different levels and precipitable water from the new 20th century Reanalysis data set (Compo et al. 2011) on selected extreme events is presented.