



Some tools to forecast the extreme precipitation events in the Mediterranean areas

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The extreme precipitation events had received priority attention due to its environmental, social and economic implications. Over the last decades, atmospheric modeling has been an essential tool to minimize their impact, with mesoscale numerical models development. However, model validation has large challenges in the case of the precipitation field. The reasons are well known, namely, precipitation measurement uncertainties, use of gridded datasets vs direct observations, statistical goodness-of-fit measures selection, etc. In this regard, accumulated precipitation throughout the event has been commonly used as an indicator of model performance. Nevertheless, because of their potentially dramatic consequences, intense sub-daily precipitation is of great importance for risk assessment. Thus, intense precipitation over a very short period often result flash floods in the Mediterranean area, for which a sub-event precipitation assessment is required. In this work hourly precipitation outputs of the WRF model has been analyzed within extreme precipitation events in Iberian Peninsula. The WRF testing was carried out considering three microphysics and two planetary boundary layer parameterizations. The results shown poor results for WRF hourly precipitation vs. observation from point to point. However, the parametrizations were relevant, with the Goddard and Thompson microphysics and MYNN PBL performing better.