

EGU2020-13837

<https://doi.org/10.5194/egusphere-egu2020-13837>

EGU General Assembly 2020

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Future trends of precipitation extremes in the eastern Mediterranean

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The broader region of the eastern Mediterranean is a well-known climate change hot-spot. The combined warming and drying of the region's mean climatic conditions have already been identified by a number of observation and modeled-based studies. Nevertheless, the future evolution of rainfall extremes has not been extensively assessed. Such events can cause severe flooding, damages to infrastructure and human casualties. In the present contribution, we use the output of a regional climate simulation in order to explore changes in the magnitude of such events. The WRF limited area model is used to dynamically downscale the bias-adjusted output of the global CESM1 model in a horizontal resolution of 12-km for the 1981-2100 period. In terms of greenhouse gas emissions and concentrations, a "business-as-usual" scenario (RCP8.5) was considered. Trends of the annual values of maximum daily rainfall are explored by using the non-parametric Sen's Slope Estimator while the significance of these trends is assessed by applying the Mann-Kendall trend test. Preliminary analysis indicates negative trends for most of the region, with the exception of northern Turkey and parts of the Balkans. Despite these negative trends, the absolute magnitude of the most extreme events is projected to increase in the majority of the grid cells. Results are compared with gridded observations and model output from the EURO-CORDEX database.