



Storms from the past in a warmer climate. Results from high-res non-hydrostatic modeling over Crete.

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Weather extremes such as precipitation can be a hazard for life and property. The region of Crete has suffered from numerous severe flood events in the past decades and local authorities have a great interest in future scenarios in order to develop measures against natural calamities. In this study we use high-res non-hydrostatic modeling outputs provided by three modeling groups (GERICS, UNI and SMHI) at horizontal resolution of about 2km. Three recent, high impact, extreme storms were selected for simulation. High spatiotemporal resolution precipitation fields were compared to observations. Simulations proved to be sufficiently efficient in realistic capturing storm events and thus valuable in impact modelling. Similar simulations, but with a perturbation of +2 degrees were conducted for the representation of warmer climate conditions. Similar storm events of today's climate over Crete could result in significantly higher precipitation accumulations and intensities in a warmer climate.