



Analysis of the risk of tropical cyclone development over the Mediterranean Sea under future climate change conditions

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Anthropogenic climate change may alter the geographical areas of tropical cyclone development. Using an ensemble of regional climate models from PRUDENCE european project, an increase in the extremes of late summer cyclone intensity over the Mediterranean Sea under a climate change scenario is detected. At least for the most sensitive model, the intensity increase is due to the formation of tropical cyclones, as shown by applying the cyclone phase space method of Hart (2003) to this model. The spread of the cyclone intensity response of the different regional climate models is large, indicating a high degree of uncertainty. The methodology itself (use of a multi-model ensemble of regional climate models together with the use of cyclone phase space as a diagnostic tool) can contribute to increase our knowledge of the effects of climate change on tropical cyclones over other areas of the world. This methodology has allowed us to detect for the first time a risk of tropical cyclone development over the Mediterranean Sea under future climate change conditions.