



Analysis of observed tropical cyclones over the subtropical eastern North Atlantic

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The occurrence of tropical cyclones over the subtropical eastern North Atlantic is rather limited, but its potential effects over several areas, particularly islands like Canary, Madeira and Azores, makes this an important issue. Here we analyse several characteristics of observed tropical cyclones affecting this area, like frequency, duration and intensity, over the last four decades. Possible changes of these indices are assessed. The large-scale environment influencing the presence of these extreme cyclones in this area is analysed. Vertical wind shear, sea surface temperature, geopotential and sea level pressure anomalies show certain patterns favouring the occurrence of these cyclones. In order to better highlight such patterns, the cyclones are subdivided in terms of its genesis location and its latitude.

As a first step towards analysing possible changes due to future climate change, the ability of regional climate models to simulate these cyclones is analysed. A multi-model ensemble of evaluation runs taken from ESCENA project is used to this effect. These simulations have been selected as the model domains cover partly the area of interest, and the evaluation runs have been nested in the relatively high-resolution ERA-Interim reanalysis.