Mediterranean cyclone climatology in future climate scenarios

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The presentation briefly reviews recent results on trends of the cyclonic activity in the Mediterranean region, which suggest its reduction during the second half of the 20th century.

The consistency between the present trend and future scenario simulations is discussed. New results based on simulations carried out with the RegCM regional climate model at ICTP (Trieste, Italy) are presented. The A2 and B2 scenario besides a control (1960-1990) simulationi are considered. The analysis has been carried out both using a cyclone trajectory identification algorithm and computing the SLP standard deviation of the band-pass filtered Sea Level Pressure fields. Results show a climate change signal increasing with the emission level, that is larger in the A2 than in the B2 scenario. With respect to the control simulation, the A2 scenario shows a significant reduction of the synoptic variability in spring and autumn.

In winter a large reduction of the overall number of cyclones and a marginal increase of the frequency of deep cyclones are simultaneously observed. The links of the cyclone climate change signal with those of precipitation, wind waves, and coastal surges are discussed.