



Effects Of A High Resolution Marine Model On Mediterranean Cyclones

A. Sanna (1), A. Bellucci (1), S. Gualdi (1,2), P. Oddo (2), and E. Scoccimarro (2)

(1) CMCC, Bologna, Italy (antonella.sanna@cmcc.it), (2) INGV, Bologna, Italy

The present study focuses on the effect of the resolution of Mediterranean Sea circulation on the simulation of the frequency and characteristics of extra-tropical cyclones over climatological time scales. To this aim a global AOGCM coupled with an interactive high-resolution model of the Mediterranean Sea is used to produce a climatology of cyclones over the Euro-Mediterranean region. The analysis is then repeated using a set of simulations performed without the high-resolution Mediterranean module. Cyclones are analyzed with the Lagrangian approach, by means of an objective track-identification tool. Cyclones are grouped according to their genesis location and the corresponding lysis regions are identified. Particular attention is devoted to the impact of sea-surface fields (temperature gradients and heat fluxes) on the generation and evolution of cyclones.