

Intercomparison of intense cyclogenesis events over the Mediterranean basin based on baroclinic, diabatic and topographical influences

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A large number of high impact cyclones all over the Mediterranean basin have been reported on the data base of the MEDEX project (<http://medex.inm.uib.es>). A numerical study on the impacts and interactions of baroclinic, diabatic and topographical factors is carried out through a PV-based system of prognostic equations for 14 intense MEDEX cyclone episodes occurred in different zones of the basin (Western, Central and Eastern Mediterranean). The main aim of the study is to investigate the possible semblances and differences about the relative weight of the considered cyclogenetic factors on the cyclone evolutions as function of cyclone type and geographical area. Preliminary results indicate that except for the upper-level PV anomalies which exert a leading influence in most of the events, the role attributed to the other individual factors (low-level baroclinicity, diabatically generated PV and topographical forcing) and to the mutual interactions is generally case dependent.