



Mediterranean cyclones, a regional source of high impact weather

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The singular geography of the Mediterranean region makes this area one of the most cyclogenetical in the World, with particular concentration of low generation in the Genoa and Cyprus surroundings. Some of the cyclones are intense enough to produce strong winds. Some of them and also some weaker cyclones are able to focus and trigger heavy rain. Heavy rain appears related to cyclones in the Mediterranean in more than 80% of the cases.

High impact weather in the Mediterranean, particularly heavy rain (and flooding), is surprisingly important, with large social impacts and amounts of rainfall sometimes reaching 200, 300, 500 and even 800 mm in only 24 hours.

In order to progress on the knowledge and forecasting of the Mediterranean cyclones and the high impact weather associated to them, an international project, called MEDEX, was designed and launched several years ago.

Studies already made in connection with MEDEX are showing that the Mediterranean cyclones are influenced by the geographical factors and the majority of them are linked to geographical features, but some of the most important cyclones are mainly conducted by upper level disturbances. Latent heat release in medium and low levels is also an important factor in some cases.

The initial studies on sensitivity show that there is a high sensitivity of the cyclonic evolution and their consequences to the initial conditions, at least in some important cases. In that case high sensitivity areas are seem to be mostly located out of the Mediterranean at high levels (for medium-short range prediction) and within it at low levels (for short range prediction).

Further work is necessary in MEDEX to better define some processes, the sensitivities,

the related observational strategies, the impact of targeted observations and the social impact of the Mediterranean cyclones. In this sense MEDEX has to become strongly linked to THORPEX, with regard to the Mediterranean region and the cyclones that produce high impact weather in it.