

Permanent and changing factors in extreme Mediterranean precipitation events

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Possible changes in the frequency of extreme precipitation events in the Mediterranean region are considered in this contribution in parallel with the short range predictability of particular cases. Direct assessments about long term changes in the climatological frequency of this kind of phenomena are really difficult, due to the relative rarity and irregularity of them. Taking as a paradigmatic example the Spanish absolute record of precipitation in 24 hours (that is, the Oliva case, with 817 mm collected on 4 November 1987), the local orography, the regional orography, the mesoscale patterns (low pressure small centre and low level warm/humid jet) and the synoptic scale frame appear as the chain of factors that play a role in this kind of events. Surface heat flows from sea have also to be considered. Some of the above mentioned factors (namely, the local and regional orography) are permanent, no-changing at all. They may be contributing to make more predictable this kind of extreme phenomena and to the stability of the long term frequency of them. On the contrary, both the mesoscale and synoptic scale acting meteorological structures are creating uncertainty in the short range prediction of particular cases and they can be seen as the changing frame, in a changing climate, that can produce variations in the long term frequency of the extreme precipitation events. In this contribution, after identifying main factors conditioning the Oliva case and others, trends in large scale structures, supposedly linked to climate change, are explored, trying to detect changes in them and their possible influence in the mesoscale meteorological factors.