



## **Analysis of the December 2009 heavy rain events in Cyprus**

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The present study investigates four cases of heavy rain which have affected the area of Cyprus during December 2009. These cases were characterized by intense rainfall, (both locally and more generally over the whole area of Cyprus). During the first month of the cool season of the year (December-February), only these four cases of heavy rain were registered, while the rest of the month was characterized by little or no rain. Therefore, it is of great interest to study the dynamic, synoptic and thermodynamic conditions that distinguish these four events from the rest of the month's weather phenomena and investigate whether any common characteristics among them can be identified.

A spatio-temporal study was performed on all of the four cases' synoptic characteristics and on some selected dynamic fields at three representative tropospheric levels in the lower, medium and upper troposphere. A study of some instability indices was also carried out in order to test their performance and efficiency in such a diagnostic approach.

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