



Dynamic of the troposphere in cases of weather extreme events

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The aim of this paper is to present a conceptual model that characterizes the dynamic of the troposphere in cases of the weather extreme events as heavy precipitations and floods. This model is the result of studies that have been made for a lot of this type of cases that occurred in Moldavia, region from northeastern Romania. This is based on the relationship between synoptic and mesoscale patterns of the entire atmospheric column, between sea surface level and the tropopause level. In addition, the orographic configuration, having an important role in the development and persistence of the mesoscale patterns, is included.

The through in middle troposphere, the anomaly of the dynamic tropopause and a cyclone with a backward trajectory are the main dynamic elements of the meteorological fields for the conceptual model. The enhanced vorticity field in the upper troposphere and the water content fluxes are also considered. The analysis datasets from ECMWF, the satellite images and data sets from ALADIN and ALARO models were used to exemplify the availability of the conceptual model. The results of this analysis show that the model can be used to forecast the extreme weather phenomena as heavy precipitations on extended areas.