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Mesoscale and Synoptic Scale Interactions Leading to Intense Convection: The Case of 18 August 2008

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A case study is presented involving a supercell storm that produced large hail and high rainfall rate damage in the hilly region of the southern Romania during the 18 August 2008. The study emphasizes the pre convective period and examines interactions between mesoscale processes and the synoptic scale environment that led to thunderstorm development. The suppercell storms formed after a quasi-stationary mesoscale convective system has affected central and southern part of Romania including the study area, making the thunderstorm difficult to forecast. Mesoscale analysis using real and model dates revealed the initiations of the convection in the area of interaction of two convergence lines. One was created by the interaction of the synoptic flow with the curved shape of the Carpathian Mountains, and second was mountain breeze. This work, along with similar studies, illustrates the wide range of factors that must be considered for thunderstorm forecast decision in Romanian territory.