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# An exceptional tornado outbreak during 2005 in southeastern Romania

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The number of tornadoes reported in Romania increased significantly in the last years. Although the damage evaluated on the F scale of these events did not reach nor exceed the historical F3+ Facaeni tornado recorded in 2002, and there were no victims. The societal impact was very important due to little previous experience among the population with respect to these unusual events for the climatology of Romania. The 2005 convective season had a record of an unusual severe weather events in Romania: flash floods, hail, intense cloud to ground strokes and many severe wind cases like tornadoes, downbursts, waterspouts and funnel clouds. 13 tornadic events were reported across the country and many of them were documented. The majority of these occurred in the southeastern part of Romania. This paper presents the mesoscale conditions that sustained the development of the convective storms responsible for these events, of which many were accompanied by supercells and bow echoes. These mesoscale conditions are compared with those analyzed for tornadic events that were reported in Romania before 2005. It becomes evident that the southeastern region of Romania brings together the main ingredients for tornadic events in a more frequent manner than other parts of the country. Numerical model outputs, sounding and surface data, SAFIR lightning, S-band and C-band Doppler radar and satellite data are used to identify the sources of these ingredients. The main mesoscale patterns that produced tornadic events in Southeastern Romania are also compared with those identified in other countries. In the end, the paper presents some operational aspects like survey evaluation of the damage along the path of the tornado. Finally the impact of the first tornado warning ever issued in Romania is evaluated.