



A 15 years climatology of storm tracks by analysis of Vertical Maximum Intensities over north-eastern Italy

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North eastern Italy is a spot of convective events in central Europe. A new approach to the study of storms in this region is presented, systematically analyzing all Vertical Maximum Intensity (VMI) data, collected by a C-band dual polarization Doppler radar. From these data an original system to detect each storm track has been developed, using an object oriented framework, i.e. the MODE (Method for Object-Based Diagnostic Evaluation) function from NCAR-DTC MET suite. This tool provides comparison of spatial fields as precipitation or, more generally, fields with coherent spatial structures.

Time sequences of VMI fields are compared using MODE tool that provides, as output, a set of centroids defined on certain reflectivity thresholds and a set of associated couples of centroids for each time step, according to some criteria (as centroids distance, borders distance, storm shape, and more).

After accurate manual set of the criteria and thresholds parameters on the MODE tool, storm tracks connecting associated centroids are collected, together with some properties as length, duration, VMI intensity trend, over a 15 years long period.

Some preliminary considerations about climatology of storms in the north-eastern Italy area are presented, also considering sensitivity studies on the MODE tool parameters, together with perspectives for future research involving also meteorological stations, hailpads and lightning data.