2.27 STORM CELL CHARACTERISTICS DERIVED BY CELL-TRACKING ALGORITHM CELLTRACK - EVALUATION AND OPERATIONAL VISUALIZATION

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A cell-tracking algorithm CELLTRACK was developed in the Czech Hydrometeorological Institute (CHMI) in the past. It is one of many cell-tracking algorithms developed to identify and track radar reflectivity cores representing fairly well convective storm cells. Primarily, CELLTRACK determines and tracks storm cell characteristics derived from various radar products, but characteristics derived from other sources (e.g. lightning detection data) can also be used. CELLTRACK has been running routinely for several years in the CHMI. CELLTRACK results are available to forecasters and other users but their presentation is currently not suitable for routine use. The development of a suitable tool for processing and displaying of radar reflectivity cores and their characteristics is under way.

The contribution describes evaluation of various radar-based storm cell characteristics identified by CELLTRACK in order to find suitable characteristics or their combination for identification of potentially severe storm cells. Storm cell characteristics connected with occurrence of hail (POH index based on Waldvogel criterium, POSH and MEHS based on HDA algorithm described by Witt, and also hail identification by polarimetric radar measurements) were verified against ground truth. The contribution also shows examples of advanced CELLTRACK visualization in a new development version of a web-based application JSMeteoView for operational displaying of radar data in the CHMI.