

## 9.17 RADAR NETWORK-BASED MESOCYCLONE DETECTION

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The weather radar network of the German Weather Service (Deutscher Wetterdienst, DWD) consists of 17 individual radar sites located at a mean nearest-neighbor distance of approx. 140 km. A ten-elevation 3D-volume scan, with a maximum unambiguous range of 180 km in its lowest elevations, is recorded by each radar site with a 5 min update cycle.

The dense radar network supports a multi-radar algorithm approach for the detection of severe weather features which processes the elevation scan data of all radars simultaneously. It particularly benefits from the data in overlap areas (as opposed to single-site algorithms running independently for each radar site).

In this contribution, the performance of the network version is compared to the single-site version through detailed case studies and statistical analyses. Its use is combined with vertically integrated liquid (VIL) and rotation track multi-radar products, which further help to identify damaging storms.