Winter and summer weather studies using high resolution radar data

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Using the latest radar products of DWD helps analysing and nowcasting severe weather events both in winter and summer season.

In fall 2012, the new 5 minutes radar scan strategy has become operational. Temporally and spatially high resolution Doppler radar data of up to 250 m in combination with new dual-polarimetric information of the renewed radar network give additional information and help to classify precipitation events and to warn adequately and in real-time.

The contribution will present some weather studies:

In winter the additional phase information of the new dual-polarimetric radar products is very valuable to nowcast snow and black ice, whereas in summer the high resolution radar information in space and in time is a precondition in order to nowcast the fast and variable development of convective cells. This includes heavy precipitation events like hail and meso-cyclones which are responsible for heavy damage to infrastructure and can be life threatening.

For the detection and tracking of convective cells, the variable terrain-following precipitation scan products and the constant elevation volume scan products are used in combination. Both are used for the automatic warning products, which are currently used at DWD, e.g. the thunderstorm warning algorithm KONRAD and the meso-cyclone detection algorithm.

Furthermore, the future perspectives in the further development of related nowcast products at DWD will be presented. These products are/will be used for operational services.