



Extended radar-based hail detection testing over the Czech territory

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Several significant hail-fall events occur in the Czech Republic each year. Considerable damages on buildings, cars and in agriculture are caused. Reliable monitoring of severe hail occurrence by network of ground stations is not possible because of small extent of hail events and their high spatial variability. Radar-based hail detection is tested in the Czech Republic using two C-band single polarization Doppler weather radars. In the previous work (Skripniková and Řezáčová, 2014), selected radar-based hail detection algorithms were tested. Waldvogel algorithm and the NEXRAD severe hail detection algorithms with adjusted threshold values showed the best performance for the Czech territory. Presently the severe hail event database was updated. The hail detection algorithms are tested over the extended period of 2007-2014. More proper temporal and spatial information about the hail-falls is used for parameter optimization for the Czech territory. In the discussion adaptation of the hail detection algorithms for operational use will be mentioned. Hail risk distribution and hail climatology of the Czech Republic based on the adjusted algorithms will be discussed.

Reference

Skripniková, K., Řezáčová, D., 2014. Radar-based hail detection. *Atmospheric Research* 144, 175-185.