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The approach to the automated diagnostics of severe squalls (≥ 25 m/s) based on the DMRL-C radar network information and the results of numerical modeling is presented. The discriminant function used for the diagnostics was previously tested during the automated forecast of severe squalls. The predictors are the maximum convective velocity calculated from the DMRL-C data and the Laplacian of surface pressure predicted at the 0,05×0,05° radar data grid points with a temporal resolution of 10 minutes according to the regional model of the Hydrometeorological Center of Russia. The proposed approach was tested during the period from May 1 to July 31, 2020 (more than 13000 observation moments). The presented results will provide additional data on severe squalls and can be used to refine short-term forecasts and storm warnings about such weather events.

Keywords: diagnostics, squall, severe weather events, radar data, DMRL-C, simulation results

Tab. 1. Fig. 4. Ref. 13.