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Evaluation of the information content of radar data in the analysis of frontal cumulonimbus clouds in Western Siberia / Gorbatenko V.P., Kizhner L.I., Apostolidi C.T., Karpova A.A. // Hydrometeorological research and forecasts, 2025, no. 4 (398), pp. 33-51.

The objective of the study was to select a set of radar parameters characterizing frontal cumulonimbus clouds during thunderstorms and hail events registered by meteorological stations in the Novosibirsk region. In total, 1883 thunderstorms and 67 hail events were analyzed from 2021 to 2023. Statistical characteristics of cloud radar parameters for thunderstorms and thunderstorms with hail were calculated. Differences between these parameters were demonstrated, and threshold values were calculated based on DMRL-C Novosibirsk data. In addition to the parameters already proven in practice for identifying convective phenomena, the examined parameters included turbulence and vertically integrated liquid water content.

Keywords: Western Siberia, thunderstorm, hail, DMRL-C, radar characteristics, threshold values, meteorological observations

Tab. 5. Fig. 2. Ref. 26.