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The analysis of the long-term observations (2008–2019) of thunderstorm activity in the North Caucasus using the High-mountain Geophysical Institute lightning detection network with LS8000 and LS7002 sensors is performed. Climatic and orographic regional factors forming the spatial heterogeneity of thunderstorm activity in the analyzed region are identified. It is shown that the number of thunderstorm events, their direction and lightning discharge intensity determine microphysical processes in the atmosphere, namely, the intensity of cloud and precipitation formation.

Keywords: thunderstorm activity, climate, lightning, lightning detection network, precipitation, radar

Tab. 1. Fig. 5. Ref. 12.