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Meteorological Conditions for Functioning Automobile Transport in Moscow Region

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The purpose of this study is to investigate weather and climate conditions of functioning automobile transport in Moscow region. For this, statistics on the daily number of accidents in the City of Moscow in 2013–2014 were studied and compared with the weather conditions. Various weather phenomena and meteorological parameters that affect the increase and decrease in the number of accidents in warm and cold seasons were identified; the extent of this influence was assessed. Moreover, an analysis of the distribution and change of the frequency of occurrence of these phenomena and meteorological parameters in 1961–2010 in Moscow region was conducted. In the cold season, there are much more weather events influencing the growth in the number of accidents than in the warm season. Fallout of more than 2 cm of snow per date, the reduction in meteorological visibility, drizzle and snow storms lead to an increase of accident rate by 5–15%. In the warm season, when thunderstorms and heavy rainfall there is a decrease in accidents; increase in the number of accidents happens in hot weather (maximum air temperatures over +30 °C). In the period 1991–2010 compared to 1961–1990 in the Moscow oblast the sustained cold period and amount of precipitation under negative air temperature has reduced; a decrease in the number of days with reduced visibility range and the offset of the date of the fallout of the first snow aside winter months is observed, which is favorable for automobile transport. At the same time, there is an increase in the number of days with transitions of air temperature through 0 °C, and the number of hot days, which negatively affects the functioning automobile transport.