



Connection of avalanching with atmosphere circulation of Northern Hemisphere

T.Glazovskaya (1), N. Kononova (2), E. Mokrov (3), Yu. Seliverstov (1) and A. Tareeva (1)

(1) Geographical faculty, Moscow State University, Russia, (2) Institute of geography of Russian Academy of Sciences, Moscow, Russia, (3) Center of Avalanche Safety, "Apatit" JSC, Kirovsk, Russia (yus5@yandex.ru /Fax +7 095 9328836)

Formation of snow avalanches in many cases is determined by conditions of a current synoptic situation. Therewith the atmospheric circulation is one of the most dynamic components of climate system.

B.L. Dzerdzeevskii and his disciples established the repeated frequency of similar circulating situations and the elementary circulating mechanisms (ECM), determining atmosphere circulation above the all Northern Hemisphere and characterized by preservation of the main carries of air masses during the period from 2 to 10 days (1). The analysis of daily synoptic maps has allowed the authors of typification to divide the all variety of global circulating processes into 41 ECM.

The dates of departure of snow avalanches were compared with the data of a calendar of ECM change. There were used the data on departure of avalanches in Northeast of Russia, in Khibinian mountains and in Davos region (2) and the Internet information of snow-avalanche services of the world about avalanche incidents and accidents in various countries (3). ECM, determining atmosphere circulation of Northern Hemisphere in the day of avalanching and in the previous 3 days were defined. Maximum quantity of avalanches was in the period of ECM 13z operation, relating to the southern meridional group of circulation. Its frequency is increasing from the beginning of the 1980-th. ECM, preceding and operating most frequently in the days of avalanching are chosen for different mountain regions. So, in the mountains of Northeast of Russia departure of avalanches happened in 78% of cases, when the mechanism 8vz acted the day before. In Khibinies 80 % of avalanches descended in the days with the

mechanism 8bl.

It is necessary to accept perspective the study of connection of processes of avalanche formation with global circulation processes for elaboration of techniques of the short-term prognosis. Since 1957 in the Northern Hemisphere the epoch of meridional circulation with a dominance of southern processes in atmosphere installed. As the sharp change of epoch of circulation is improbable, it is possible to assume the preservation of the operating avalanche regime within the nearest several years in the mountain regions of Northern Hemisphere.

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References

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