

FEATURES OF MODERN TRANSFORMATION OF CLIMATIC CONDITIONS IN REGION OF THE

Voloshchuk V., S.G. Boychenko, O. Zviglyanich

Abstract: Results of the statistical analysis of materials of regular instrumental meteorological observations in the physical-geographic region of the Ukrainian Carpathian mountains (47,87°N-49,95°N, 22,23°E-25,97°E) are presented. The period 1951-2001, of which the first third is characterized by a monotonous decrease of global temperature on a background of the general global warming with coefficient of linear trend 0.65 °C for 100 years, and the other two thirds - by a sharp warming caused by superposition of the linear trend of global warming (considered to be a result of anthropogenic amplifications of the greenhouse effect) and an ascending branch known as the quasi-periodical fluctuation of a unknown physical nature (with a period of 55 years and amplitude 0,17 °C) is considered. Estimations of the basic statistical characteristics (average long-term, a dispersion of year-to-year variability, empirical statistical distribution and linear trends coefficients): monthly average temperatures, the monthly sums of precipitation are obtained. The main attention is given to the analysis of influence of height above sea level on the transformation features of statistical characteristics of the considered meteorological elements. The analysis of materials of observation on 20 meteorological stations (113-1451 m above sea level) is carried out. The possible physical mechanisms responsible for established transformation of climatic conditions of the Ukrainian Carpathians under the influence of global warming are analyzed. The possibility of convective phenomena amplification, influence of variations of the North Atlantic oscillation in the formation of extreme synoptic conditions in region of the Ukrainian Carpathians, and also in the changes of local ecological factors under human influence is considered.