



The probability forecast of a cooling of Earth's climate under influence of reaction to an "orbital signal" for the following tens of thousands years

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The last four climatic cycles are considered (~20 thousands years). Time courses of global temperature and eccentricity of the Earth's orbit are compared for this period. As a result of this comparison the known hypothesis that it is necessary to expect in the future of strong decrease of global temperature under influence of process of gradual decrease of the eccentricity of the Earth's orbit is confirmed. Various questions concerning insufficiency of Adhemar-Croll-Milankovitch's "insolation" hypothesis for an explanation of strong reaction of terrestrial climatic system on an orbital signal are considered. Some ways for the decision of a problem concerning character of a possible physical mechanism forming very strong reaction of terrestrial climatic system to very weak "orbital signal" are offered. The detailed quantitative analysis of character of gradual decrease of global temperature after achievement of a maximum level for four previous maxima (410, 320, 235, 125 thousands years ago) is carried out. By this analysis the similarity criteria are determined and is constructed the semi-empirical model of a time course of global temperature after achievement of a large-scale global maximum. On the basis of obtained semi-empirical model the probability forecast of a cooling of Earth's climate under influence of "orbital signal" for the following tens of thousands years (after last maximum of warming - Optimum Holocene - took a place) is constructed. The analysis of the published materials concerning a century course of temperature of the Northern hemisphere and the East Europe for last millennium is carried out. This analysis the validity of our forecast has confirmed. For last millennium the statistically significant negative trend of temperature because of a reaction of terrestrial climatic system to influence of "orbital signal" (0,3 °C per 1000 years) is revealed.