



On evident signs of a natural origin of the modern climate change

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Identification of the sources of the current global climate warming is among the key problems faced by the Earth sciences. Assessment of the causes behind the climate change, including the rise in the average air temperature, based on the real hydro-meteorological data analysis did not for a while yet generate a desired unambiguous result. Equally little success has been achieved when it comes to assessing the relative impact of various factors since the natural and anthropogenic effects are indistinguishable intertwined in the above-mentioned data. Nevertheless, it seems that the trend-like characteristics of the man-induced impact on the climate can, most likely, be represented by the linear trend variability, whereas its oscillatory modes will be manifestations of the internal dynamics of the ocean-atmosphere system. This presumption was used in the interpretation of the key results of our study.

The study had examined the global fields of near-surface air temperature and atmospheric pressure for the period of 1900-2008. Along with the general rise of the global mean temperature, the following regional peculiarities of the current climate change had been revealed. It was discovered that in the northern hemisphere the changes in the temperature anomaly at a century scale and the dispersions of its annual variations were opposite in phase in the continental areas, whereas above the oceans it had manifested a coordinated character. This characteristic of the climatic variability can be attributed to the process of redistribution of heat between the oceans and the continents. The temporal variability of the space structure of atmospheric pressure and temperature fields over the period of 1950-2008 has also revealed the presence of opposite processes of heat redistribution in the oceanic and continental areas. The conclusion was that within the structure of the global temperature disturbances the key parameter is, in fact, the century scale in itself. The study provides a spectrum which precisely reflects the respective frequency range within which the variability of climatic system, with its dependence on its own internal dynamics, clearly displays the a stable pattern.

The result is that the recent global warming is most likely a mere consequence of a substantial redistribution of heat between the oceans and the continents, which is no other than a natural process. Moreover, the revealed tendency of a certain return of the climatic system to its original state characteristic of the last quarter of the XXth century gives every reason to believe that the observed warming in the continental areas can be expected to soon be over due to the current transition of the climatic system to the phase of intensive heat accumulation by the oceans.

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