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Estimation of possible climate induced arctic rivers water runoff change

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New conditions of water, ice, thermal, biological and other regimes will emerge in the interaction area of river and sea waters as a result of northern rivers water inflow change into the Arctic Ocean.

The water inflow change can be induced by climate change impact. Investigation of river runoff spatial and temporal variability and also estimation of river inflow change are very important. Such investigation can reduce possible negative results from such changes.

Investigation of the arctic rivers water regime is also vital due to regional tasks concerning ecologically safe and economically effective water resources management. In the other worlds such study is important in order to provide sufficient level of hydroecological safety of the region. Breach of the hydroecological safety will lead to significant economical losses.

Statistical analysis of long-term fluctuations of river runoff characteristics and its major climate factors was done to meet such goal. Also analysis of arctic rivers seasonal runoff distribution and investigation of river runoff and its climate factors connection are carried out. The methods of long-term forecasting of arctic rivers water inflow are presented.

Formal statistical analysis of connections between runoff long-term fluctuations and its major climate factors provides reliable runoff estimation under the climatic variations in the arctic basin regions. The long term estimation of runoff change is pre-

sented.

Conceptual model of runoff generation is considered for several watersheds. The model results give evidence that it can be used in long-term runoff change estimations and forecasting under the climate change impact. The long-term forecast of hydrological regime change for these watersheds are shown.