



## **Present state and climatically induced changes in the low-flow and maximum runoff in the North Caucasus**

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A general rise of precipitation in North Caucasus results in directed increase in mean annual river runoff and summer minimum monthly discharge. The main reason of increase in water abundance of winter period is more often winter thawing due to overall warming of winter period. Intensity of these processes substantially varies throughout the study area and generally correlates with spatial distribution of observed trends in climatic characteristics. Thus the most pronounced changes occurred in the western part of the plain territory. In mountainous part, especially in the areas of certain geological structures expansion, the analyzed characteristics of river runoff remain stable. In the most arid Southeastern part with a negative trend in annual precipitation, a decrease in river runoff during low-flow periods is detected. Positive trend in maximum runoff is observed for one third of gauging stations in Kuban river basin that can be interpreted as a favorable climatic background for an increase in flood hazard. An opposite tendency is observed in Terek river basin for almost 40% of the gauging stations. This work was supported by the Russian Science Foundation (project no. 17-77-10169)