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Assessment of the climatic and anthropogenic contribution to long-term fluctuations in seasonal river runoff in the Ural river basin / Yumina N.M., Magritsky D.V. // Hydrometeorological Research and Forecasting, 2024, no. 1 (391), pp. 135-151.

The analysis of long-term fluctuations in seasonal runoff of the Ural basin rivers is performed, statistical relationships between runoff and the main meteorological factors (air temperature and precipitation) are estimated. Weather stations with the highest correlation between the main meteorological factors and seasonal runoff of the Ural, Sakmara, and Ilek rivers are selected. Empirical dependences of seasonal runoff on air temperature and total precipitation are substantiated for three hydrological stations located on these rivers during the period with minimum anthropogenic load on water resources (slightly disturbed runoff). Their statistical and graph-analytical analysis showed that they have a fairly high correlation for the period of spring flooding and the summer-autumn season, and the dependences for the period of winter low water are much less accurate. Based on the constructed dependencies for a period of significant anthropogenic load on the water resources of the region, a comparative analysis of the calculated (undisturbed) seasonal runoff of the Ural, Sakmara, and Ilek rivers with the observed one is performed.

Keywords: Ural, seasonal runoff, air temperature, precipitation, empirical dependences, correlation

Tab. 3. Fig. 2. Ref. 26.