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Features of the Yenisei River long phases of increased/decreased water flow (downstream from the confluence of the Angara River) / Georgiadi A.G., Milyukova I.P., Barabanova E.A., Alentyev Yu.Yu.// Hydrometeorological Research and Forecasting, 2024, no. 3 (393), pp. 124-141.

The article presents the results of studying long phases of decreased and increased conditionally natural annual and seasonal water flow of the Yenisei River at Kyzyl City, Nikitino and Bazaikha settlements. The retrieval of long-term water flow time series (with excluded anthropogenic changes) at Nikitino and Bazaikha settlements is based on the transformation of the annual hydrograph of daily water discharges using the Kalinin–Milyukov method. Long phases of annual and seasonal water flow were revealed on the basis of cumulative deviations curves. For the entire observation period of 1936–2021, two long contrasting phases were revealed for winter flow, which are typical for many studied rivers in Russia. At the same time, long-term changes in runoff of the combined season of snowmelt flood and summer-autumn rain floods, as well as annual water flow, were characterized by a four- to five-fold change in contrasting phases. The duration of contrasting phases reached more than 50 years, and the phases of decreased water flow were significantly longer than the phases of increased flow. The difference in the water flow of contrasting phases of the Yenisei River is most significant for winter flow and is on average equal to 20–40 %, and the one for annual flow and flow in the season of snowmelt floods and summer-autumn rain floods is 9–12 %.

Keywords: annual and seasonal water flow, long-term changes, long phases, hydrograph transformation method, cumulative deviation curve

Tab. 6. Fig. 4. Ref. 25.