DOI: https://doi.org/10.37162/2618-9631-2025-4-129-143

Improvement of the methodology for forecasting spring runoff characteristics of rivers in the Zhaiyk-Caspian basin under the conditions of available hydrometeorological information / Sairov C.B., Tillakarim T.A., Serikbay N.T., Aitymova B.B. // Hydrometeorological research and forecasts. 2025, no. 4 (398), pp. 129-143.

The results of research and approbation of improved methodology of pro-forecasting of maximum water levels in the spring period of the year using regression analysis are presented. The rivers of the Zhaiyk-Caspian basin belonging to the Kazakhstan type with spring flood are chosen as the object of research. The article considers the improvement of the existing methodology for predicting maximum water levels by using additional factors of spring runoff formation. Thus, in addition to the factors of spring runoff formation (temperature regime of spring, winter precipitation, hydrological regime of rivers at the time of forecast release), as additional predictors it is proposed to take into account characteristic parameters of hydrological regime, such as: duration and water discharge at the end of the flood of the previous year, as well as the minimum winter runoff. Taking into account these factors allowed to increase the accuracy of forecasts of the maximum water level of spring floods – the quality criterion of the methodology increased from 0,02 to 0,25.

Keywords: hydrological forecast, maximum level, monitoring, floor-soil, snow supply, Kazakhstan

Tab. 3. Fig. 4. Ref. 19.