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The Hydrometeorological Center of Russia has developed a system of methods for forecasting spring flood characteristics, which was implemented for eight stations on the Ishim, Tobol, and Ural rivers in 2024. Specific features of the methods are the simplicity of their obtaining and implementation for a particular river reach and a possibility of the fast correction of forecasts as the current information is available.

The peak water level at the station was predicted based on its dependence on the peak water level at the upstream station. The date of the flood peak was predicted with account of the data of the peak at the upstream station and probable values of the travel time from the upstream gauge to the predicted downstream one. The date of the water level drop to the level of a severe event was forecasted taking into account the height and date of the flood peak using the calculated recession curve obtained by the statistical analysis of flood recessions in the previous years. The date of the water level drop to the level of an adverse event was predicted by extrapolating the flood recession observed during 10–15 days after the flood peak. The mean forecast lead time is 9 days.

The forecasts were issued in a deterministic and probabilistic form and gave quite satisfactory results, which were used in the organization and implementation of measures to protect the population and economic facilities from the floods observed in 2024. The efficiency of the developed methods allows recommending them for use in predicting flood characteristics in various regions of Russia.

Keywords: flood characteristics, river gauge, water level, statistical analysis, forecast, deterministic and probabilistic form, flood protection

Tab. 7. Fig. 3. Ref. 22.