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Conceptual models of runoff formation used in the operational practice of hydrological forecasting by the Hydrometeorological Center of Russia include simplified parameterization of snow cover dynamics based on the use of snow cover melting coefficient, water-retaining capacity of snow and secondary freezing of meltwater in case of return of negative air temperatures. This schematization of the process is well established for the reliable calculation of the snow water equivalent for subsequent use in the calculation of meltwater inflow to the catchment surface and the calculation of streamflow characteristics. At the same time, the lack of calculation of snow density and snow height in the used schematization restricts the use of schemes for calculating of soil freezing depth in hydrological models, which seems to be extremely important for modelling runoff on mid-latitudes rivers, i.e. for the most Russian rivers. To overcome this disadvantage, the snow density and snow height parameterization was added to the calculation scheme of the model, which was verified using Roshydromet's snow measurement routes data and shown a good and satisfactory quality of modeling of model characteristics.

Keywords: snow cover model, hydrological forecasts, conceptual hydrological model

Tab. 3. Fig. 7. Ref. 24.