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Assessment of the radiative processes impact on the surface fluxes and temperature forecast

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The goal of the study is estimating of impact of improvements in the physical parameterization scheme in the T169L31 model of the Hydrometeorological Research Centre (HMRC) of Russia on the forecast quality.
Surface temperature is one the determinative element for boundary layer computational characteristics, therefore, the accuracy of the surface temperature simulation determines surface fluxes forecast quality. Heat budget of the upper thin soil layer is the source in the conductivity equation, witch determines the accuracy of the surface temperature estimate in the numerical forecast models as a source of the radiation fluxes in the heat budget equation. Renewed radiation scheme of the Global Spectral Model of HMRC was included in the 5 days weather forecast. In the new scheme the increased spectral resolution and more accurate description of the radiation absorption in the water vapor continuum is used. Impact of the mentioned changes on the forecast of the atmospheric characteristics and surface temperature is discussed. Quantitative estimations of certain predicted parameters are presented.