DOI: https://doi.org/10.37162/2618-9631-2025-2-64-84

An updated system for forecasting pollutant concentrations in the Moscow region based on the CHIMERE-2023 chemistry-transport model / Tkacheva J.V., Kuznetsova I.N. // Hydrometeorological research and forecasts. 2025, no. 2 (396), pp. 64-84.

One of the latest versions of the CHIMERE-2023 chemistry-transport model with an updated interface is actualized on the Roshydromet CRAY XC40-LC computing platform. Given that the CHIMERE-2023 model was developed and configured for use in the EU countries, the installation of the updated version for the Moscow region was accompanied by the series of numerical experiments to study the sensitivity of the model responses to changes in regional emissions and by the selection of parameters for the seasonal and daily emission distribution of the EMEP-2021 inventory used. The results of the experimental testing of the updated technology indicate generally satisfactory quality of forecasting priority pollutants, taking into account that the testing period (September 2024) was abnormal both in terms of weather conditions (the monthly mean temperature was 4 °C above normal) and in terms of air pollution with PM_{10} particles due to the frequent influence of long-range transport, as well as due to uncharacteristic ground-level ozone, which exceeded the normal by 15–18%.

Keywords: pollutants, CHIMERE chemistry-transport model, EMEP emissions, COSMO-Ru2ETR, verification

Tab. 2. Fig. 8. Ref. 19.