

Models and methods
for assessment of interactions in a city-region system
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The ecological interactions, risks, and expectations are discussed in relation to a city-region system in Siberian conditions.

In order to describe the interactions, the models of transport and transformation of substances are used together with the models of atmospheric dynamics. Detail description of the transformation chains for gaseous pollutants and aerosols plays a principle role because it is necessary for analysis of possibilities to get toxic substances. The biological and radioactive aerosols are considered as well.

The transport models are realized in the frames of Lagrangean and Eulerian statements both in forward and inverse modes.

The main function of dynamic models is to form the hydrodynamic scenarios taking into account every available data and to reproduce the peculiarities of the atmospheric circulation that aid to develop the situations like ecological disaster.

As the long range scenarios are discussed, the basic models overlay the space scales from meso-regional to global ones. Combination of all parts of the model set and organization of numerical algorithms are made with the help of variational principles by means of decomposition and aggregation techniques.

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