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Research Article

Atmospheric Transport Modeling with 3D Lagrangian Dispersion Codes Compared to Tracer Experiments at Regional Scale

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Abstract

The results of four gas tracer experiments of atmospheric dispersion are compared with the benchmarking of two atmospheric dispersion modeling codes, MI3D and MISC3D. The main topic of this comparison is to estimate the Lagrangian dispersion of tracers in the atmosphere. The atmospheric transfer on a large field, in the case of risk assessment experiments, the results of calculations show a rather good agreement with the magnitude of the concentrations measured on the soil is predicted at distances of several kilometers from the source, while we note a divergence for more than 10 kilometers by a factor 2 to 5). This divergence may be explained by the fact that a station (near the point source) was used on a field of 10³ km² throughout the calculation domain.

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