

Application of EULAG for stochastic event reconstruction in urban areas

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Event reconstruction is an important problem for emergency response in case of unknown releases - basing on monitoring data we try to find the characteristics of the source of the release. This is an example of ill posed problem, and is particularly difficult in urban areas because of a number of different sources of uncertainties. In National Centre for Nuclear Research numerous atmospheric dispersion models for emergency response have been already used, including computational fluid dynamics codes. The main goal is to simulate hazardous substances transport and dispersion in atmosphere on one hand, but also to prepare a framework for stochastic event reconstruction based on Bayesian and Markov Chain Monte Carlo techniques. For this purpose we test EULAG as it allows for pollution dispersion in urban flows. By different settings effectiveness of the model can be improved. Our experience with application to stochastic event reconstruction will be reported.