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Optimisation of air pollution dispersion and deposition models

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Gaussian plume models are commonly used class of mathematical models used in the air pollution dispersion and/or deposition modelling. The goal of the study was to optimize computations with the Gaussian model Symos'97 to significantly improve the speed of computations and to migrate computations from proprietary softwares (ArcGIS, SW implementation of the model for PC) to unified, platform-independent and open source platform via the Python programming language. The result is the Python script module which has been able to speed up whole modeling process by several order of magnitude thanks to more optimal code and parallel processing and make it more user friendly for modelers.

The modelling toolset is going to be used in studies evaluating air quality and studying effectivity of potential air quality remedies within vast regions in a detail scale.

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