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Simulation of the transport of methane-emissions in Upper Silesia using FLEXPART-WRF

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Abstract

Methane (CH₄) is the second most important greenhouse gas, right after carbon dioxide. For getting reliable climate forecasts extended knowledge about the sinks and sources of methane is necessary. The Carbon Dioxide and Methane Mission (CoMet) measured the methane emitted by venting shafts of coal mines in Upper Silesia in May/June 2018.

The goal of this study was to model the meteorology in the region of Upper Silesia at high resolution using the Weather Research and Forecast Model (WRF) and using this data as an input for the Lagrangian Model FLEXPART-WRF to simulate the spatial distribution of methane emitted by those venting shafts.