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Abstract title:

**Air Quality in Malopolska region and Krakow – contribution to FAIRMODE Pilot
Region activity**

Name and Affiliation of the First Author:

Joanna Struzewska^{1,2}

Email of first author:

joanna.struzewska@ios.edu.pl

Names and Affiliations of the Co-authors :

Paweł Durka¹, Jacek W. Kaminski^{1,3}, Grzegorz Jeleniewicz¹, Aleksander Norowski²

1. Institute of Environmental Protection – National Research Institute
2. Warsaw University of Technology
3. Institute of Geophysics, Polish Academy of Science

Abstract text

Air quality in southern Poland is often below the standards defined by the CAFÉ Directive (2008/50/EC). Most of the poor air quality episodes are due to extremely high PM₁₀ concentrations. Because of frequent high level concentration, local governments are developing mitigation strategies.

There is an extensive record of model analyses related to air quality in Malopolska and Krakow agglomeration. A high resolution operational air quality forecast for Southern Poland started in 2010 (Struzewska et al., 2018). Also, air quality modelling was undertaken in the scope of the LIFE Integrated Project “Implementation of Air Quality Plan for the Małopolska Region – Małopolska in a Healthy Atmosphere”. Modelling experiments undertaken up to date showed that one of the most important sources of uncertainty were emission estimates.



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In 2017, Malopolska region was selected as one of the “Pilot regions” for new FAIRMODE Activity that aimed to promote efficient use of the developed methodology to support and improve air quality management practices.

A number of comparisons of emission inventories were undertaken with the use of EmissionDelta. Also, Emission Composite tool was tested in order to compare spatial patterns and strength of reported sources. The annual concentrations were initially assessed based on a 24-hour operational forecast and reported to the Composite Mapping tool. In addition, the model evaluation was carried out with the most up to date DetlaTool software.

The air quality assessment for 2017 and 2018 will be carried out with the new national bottom up emission inventory. We will repeat model analyses with FAIRMODE tools. For Krakow, the focus will be on the differences between results at the regional scale (2,5km) and city scale (0,5km), based on the same high resolution emission inventory re-gridded to lower resolution. Also, experiential setup will be prepared to test the SHERPA tool.

Motivation

Presented work is focused on the use of modelling to suport and improve air quality management practices in cooperation with Malopolska Marshall Office in the scope of FAIRMODE “Pilot Region” activity.