

## **Impacts on air quality due to aviation emissions**

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One year of air quality data obtained at Zagreb airport has been analyzed to assess the level of air pollution due to air traffic. Air transportation growth has rapidly increased over the years and notable influences of aviation emissions on local and regional air quality as well as on climate are identified. The environmental impacts of atmospheric emissions from aircraft have been addressed in two separate ways: aircraft pollutant emissions occurring during the landing and take-off (LTO) phase (local pollutant emissions), and the non-LTO phase (global/regional pollutant emissions). Aircraft pollutant emissions are an important source of pollution and directly or indirectly harmfully affect human health and ecosystems.

In this work harmonized methodology for emissions estimation as well as recently estimated emissions for Croatia will be presented in relation to European and global trends. The WRF-Chem model is applied with modified aviation emissions in order to calculate local air concentrations of CO<sub>2</sub>, PM<sub>10</sub>, NO<sub>x</sub> and SO<sub>2</sub> around the Zagreb airport in Croatia. The Gaussian type model is also used to estimate the maximum contributions along the runway. The management of air quality have to include major sources within the urban area and the application air quality models is essential in the identification of environmental impacts.

*Key words:* air traffic, emissions, WRF-Chem, air quality management, pollution