

Project FOCl - Non-CO₂ Forcers and Their Climate, Weather, Air Quality and Health Impacts: Where We Are and Where We Are Going

Tomáš Halenka

Charles University, Czech Republic

Author list (excluding presenting author)

Ranjeet S. Sokhi, Sandro Finardi

Abstract

While overall the global warming with the causes and global processes connected to well-mixed CO₂, and its impacts on global to continental scales are well understood with a high level of confidence, there are knowledge gaps concerning the impact of many other non-CO₂ radiative forcers leading to low confidence in the conclusions. This relates mainly to specific anthropogenic and natural precursor emissions of short-lived GHGs and aerosols and their precursors. The anthropogenic origin is connected to large extent with the urban environment. These gaps and uncertainties also exist in their subsequent effects on atmospheric chemistry and climate, through direct emissions dependent on changes in e.g., agriculture production and technologies based on scenarios for future development as well as feedbacks of global warming on emissions, e.g., permafrost thaw. The main goal of the EC Horizon Europe project FOCl, is to assess the impact of key radiative forcers, where and how they arise, the processes of their impact on the climate system, to find and test an efficient implementation of these processes into global Earth System Models and into Regional Climate Models, eventually coupled with CTMs, and finally to use the tools developed to investigate mitigation and/or adaptation policies incorporated in selected scenarios of future development targeted at Europe and other regions of the world, with final emphasis to selected cities environment. We will develop new regionally tuned scenarios based on improved emissions to assess the effects of non-CO₂ forcers. Mutual interactions of the results and climate services producers and other end-users will provide feedbacks for the specific scenarios optimization and potential application to support the decision making, including climate policy. Coupled RCM-CTM modelling experiment strategies, emission tests and preliminary results will be presented in addition to the up-to-date status of the project.

Early Career Scientist

NO, I am not an early career scientist.

IGAC Activities

CCMi: Chemistry Climate Model Initiative