



## **Vertical structure of aerosol distribution and radiative properties over Svalbard – observations and modelling**

Jacek W. Kaminski (1,2), Joanna Struzewska (3), Krzysztof Markowicz (4), and Maciej Jefimow (3)

(1) Centre for Research in Earth and Space Science, York University, Toronto, Canada, (2) EcoForecast Foundation, Warsaw, Poland, (3) Warsaw University of Technology, Department of Environmental Engineering, Warsaw, Poland (joanna.struzewska@is.pw.edu.pl), (4) Institute of Geophysics, University of Warsaw, Poland

In the scope of the iAREA projects (Impact of absorbing aerosols on radiative forcing in the European Arctic - <http://www.igf.fuw.edu.pl/iAREA>) a field campaign was undertaken in March and April 2014 on Spitzbergen. Analysis of measurements was supported by the GEM-AQ model simulations.

The GEM-AQ model is a chemical weather model. The core of the model is based on a weather prediction model with environmental processes (chemistry and aerosols) implanted on-line and are interactive (i.e. providing feedback of chemistry on radiation and dynamics). Numerical experiments were performed with the computational grid resolution of  $\sim 15$  km. The emission inventory developed by NILU in the ECLIPSE project was used.

Preliminary analysis revealed small but systematic overestimation of modelled AOD and background BC levels. We will present the analysis of the vertical distribution of different aerosol species and its contribution to AOD for two stations on Svalbard. Also, changes of modelled chemical composition of aerosols with altitude will be analyzed.