

Cooperation with TFMM

In the framework of cooperation with TFMM MSC-E of EMEP took part in 18th meeting of the Task Force held in May 2016 in Prague, the Czech Republic. TFMM was informed about progress in transition of MSC-E atmospheric transport model to new EMEP grid.

In particular, it was shown that heavy metal pollution levels in the EMEP region, calculated on old and new EMEP grid are very similar in European part of the EMEP region. Major differences in spatial distribution of pollution levels modelled on old and new grid are noted for the southern regions of the EMEP domain and explained by differences in land-cover data used in modelling. Harmonization of land-cover data used by the EMEP centres for modelling and by WGE for evaluation of the effects was suggested.

Pilot simulations of B(a)P pollution on the new EMEP grid showed in general better agreement with measurements comparing to the results for older EMEP grid. At the same time, for some of the stations model predictions noticeably differed from the observed pollution levels. Thus, the need of further refinement of GLEMOS model parameterization of gas-particle partitioning, degradation, and deposition processes was emphasized.

Pilot results of model calculations of cadmium deposition fluxes and air concentrations with fine spatial resolution in Poland were presented. It was shown that modelling results agreed reasonably well with the observed concentrations measured at the EMEP and national Polish stations. Analysis of discrepancies between modelled and measured levels revealed underestimation of the observed levels in cold seasons. Main reasons responsible for seasonal changes of pollution levels were analyzed (Chapter 3.). Plans of further activity on country-specific study for Poland were demonstrated.

Preliminary results of country-specific case study of B(a)P pollution in Spain were demonstrated during the meeting. To analyze spatial variations of B(a)P concentrations over the country, fine resolution modelling using detailed emissions data and measurements of B(a)P at national monitoring network was carried out. Preliminary results of experimental model simulations with several emission scenarios and analysis of observed levels of PAH pollution indicated possible uncertainties in estimates of PAH emissions in Spain. Besides, the representative of Spain informed participants about ongoing refinement of national inventory of PAH emissions. Continuation of this activity is planned to include updating of the EMEP modelling results for Spain as well as results of national modelling and their inter-comparison. In addition, examination of uncertainties of national PAH emissions is appreciated.

As an extension of activities in the framework of country-scale pollution studies, it was suggested to perform analysis of B(a)P pollution levels in France and Poland. Important topic, relevant to further improvement of pollution assessment, can be the application of modelling and monitoring data fusion approaches in course of future meetings of the Task Force.

The following issues can be discussed between the EMEP Centres and scientific community at the next meeting of TFMM:

- Modelling of suspension of wind-blown dust and harmonization of land-cover data in operational work under the Convention.
- Approaches to compare “grid cell-averaged” modelled concentrations and deposition against “point” measured values.