

## TFMM workshop, Ispra, 19-20 November 2009 –

### Decisions and work plan (internal document)

Three main issues had been covered during the workshop, being the backbone of the mid-term work plan of the Task Force.

1. The EMEP field campaigns : past and future situations, field campaigns being now considered as a genuine part of the EMEP monitoring strategy;
2. The definition and realisation of heavy metals test case studies for a better understanding of the reasons why large discrepancies between emissions, measurement and modelling are still recorded, especially for this class of pollutants;
3. The implementation of a new modelling exercise for a new evaluation of the EMEP-Unified model and to foster an active participation of the expert teams in the Parties.

#### *1-The EMEP field campaigns:*

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**Feedback from the last field campaigns:** Two field campaigns (2 months each), focused on aerosol issues have been organised in 2006-2007 and 2008-2009 under the CCC coordination. They run successfully and the results are expected to be released rather quickly. Actually the results from the 2006-2007 field campaign are available for use through the CCC.

The data from the second field campaign are still processed by the measurement teams and CCC, but it is expected that they could be made available before mid-2010. This campaign was organised in partnership with the EUCAARI project. The value-added of such collaboration was acknowledged and welcome.

These field campaigns were expected to improve our knowledge of the aerosol composition and to help to explain the missing PM mass closure in the models. A large amount of parameters had been measured during the field campaigns: for instance, N<sub>2</sub> gas/particle partitioning (several sites), aerosol composition assessed in several sites thanks to the implementation of AMS devices, size distribution... Interpretation and use of the data had started: coarse nitrate parametrisation, ammonia emissions... (MSC-West), analysis of the seasonal variation of PM according to meteorological patterns (Leibniz Institut für Troposphärenforschung), aerosol composition studies (PSI, CEH..), source apportionment studies..

**Dissemination and publication:** Dissemination of these field data through the TFMM community had been discussed during the meeting. It is important that the Parties and their experts could access quickly this information for their own assessments.

Publication matters had been discussed as well. The fact that publication strategy and agreement should be defined at the same time as the campaign specification itself had been highlighted. The ACP special issue on the EMEP activities with David Simpson, Andre S. H. Prevot, Mark Sutton, and Hans Christen Hansson as editors offers the opportunity for the Parties and the EMEP centres to present their projects and analyses. TFMM experts are invited to submit their paper before July 2010 (extended deadline).

**Future field campaigns:** Preparation of the future field campaigns (2011 or 2012): The usefulness of organising field campaigns as part of the EMEP monitoring strategy was acknowledged. A frequency of a campaign every 3-5 years could be valuable. However, which compounds, material, teams, which project research to associate to such initiative? Some ideas, discussed during the meeting and proposed by the Parties through answers to a questionnaire, rose. They are related to the need to cover specific issues:

- Integration of urban or “hot spot” sites
- Focus on the coarse mode of aerosols, EC/OC
- Concurrent measurements of VOCs, OVOCs, and particulate organics,
- Concurrent measurements of ammonia/nitric acid/inorganics compounds
- Deposition fluxes measurements (Nitrogen compounds)
- Vertical profiles (in cooperation with research projects)
- High time resolution
- Opportunity to test new measurement devices over several months to assess the compromise between cost and performance: mini AMS, multi-wavelength aethalometers..

## *2- The heavy metals case studies*

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**Context:** MSC-East presented a work plan for the implementation of test case studies dedicated to the analyses of main gaps and inconsistencies between emissions, measurement and modelling in heavy metals assessments. The subject is highly sensitive (gaps can be huge!) and difficult to deal with because a large part of emissions, due to resuspension and windblown is not reported in the official emission inventories. Two presentations during the workshop (from AEA group and the TNO) demonstrated the importance of such processes.

**Main issues:** The Parties expressed their interest for such studies and some of them mentioned the availability of national data (emissions, measurement and modelling) suited to feed case them. They could also be completed by results from national projects. MSC-East proposed a number of possible analyses that could be modulated according to data availability:

- Revision of the model parametrizations (resuspension),
- Updating of emission datasets
- Simulation of future deposition scenarios
- Regional/sectoral contribution to air pollution

**Next steps:** MSC-East was asked to send a questionnaire to the Parties to frame the objectives of the case study, the methodology, and the data or input expected from the national experts. This document should help the countries in the definition of their contribution to the study. Different kinds of investigations for different countries could be proposed, depending on the data, the national expertise and the time line.

Several countries expressed their interest during the meeting and the CCC proposed to support this initiative, especially if some expertise on the EMEP measurement sites is required.

A presentation of the work progress will be given at the next TFMM annual meeting and at the EMEP Steering Body meeting in September 2010. The duration of the studies will depend on the number of participating countries and the nature of the work to be given. At least, a two years project is foreseen.

### *3- Modelling activity*

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The TFMM workshop was organised back to back to the FAIRMODE annual meeting.

**FAIRMODE** (<http://fairmode.ew.eea.europa.eu/>) : Anke Luekewille (EEA) and Panagiota Dilara (JRC) presented the main conclusions of the FAIRMODE meeting, and particularly the working groups' activity on the following topics:

- Emissions at the city scale
- Data assimilation
- Protocols and tools for benchmarking of air quality models
- Natural sources and source apportionment

FAIRMODE focussing on the urban scale where air quality thresholds are exceeded, relevant complementarities with the TFMM modelling activities should be found.

**Contribution of the TFMM:** Experts from the TFMM had been invited to give their comments on the AQ modelling guidance document edited by FAIRMODE and to participate to the working groups. Technical exchanges between FAIRMODE and the TFMM should be enhanced, particularly through reciprocal participation to the annual meetings and workshops organised by each community.

**AQMEII** (<http://aqmeii.jrc.ec.europa.eu/aqmeii2.htm>) : Martjin Schaap (TNO) presented the AQMEII initiative on behalf of the co-chairs of the project: Stefano Galmarini (JRC) and S.T. Rao (USEPA). AQMEII is a model evaluation exercise involving the European and American modelling teams who will run their model over European and US domains. AQMEII will build up a framework to drive a model evaluation process based on four stages: operational, dynamic, diagnostic and probabilistic.

**Contribution of the TFMM:** AQMEII covers the fields of interest of the TFMM (regional level, yearly study, uncertainty analysis...). Therefore, several modelling teams from the

TFMM will participate to the AQMEII project. Consistency with the modelling activity of the TFMM should be easy to establish,

**EC4MACS** (<http://www.ec4macs.eu/home/index.html>) : the EC4MACS project “brings together a consortium of institutions to build and maintain a network of well established modelling tools for a comprehensive integrated assessment of the policy effectiveness of emission control strategies for air pollutants and greenhouse gases.” Within this project, a City-Delta methodology follow-up is developed to improve the air quality urban assessments provided by regional chemistry-transport models. EC4MACS developments are followed and discussed within the TFIAM.

**Contribution of the TFMM:** Expertise from the TFMM members will be required to assess the national/urban scale results derived from the EC4MACS project. A dedicated workshop should be organised by the TFMM.

**The EURODELTA3 project:**

**Context:** Philippe Thunis (JRC) presented a summary of the main outcomes of the Eurodelta projects launched 6 years ago in the TFMM framework, and supported, in a second phase, by CONCAWE. The objective was to evaluate the uncertainties of source/receptors matrices thanks to the analysis of the results provided by several models. A new phase for this modelling project is now considered by the TFMM, with the aim of updating knowledge about regional CTMs uncertainties and assessing the performances of the EMEP model.

**Rationale for a new EURODELTA project:** the TFMM discussion stated that two kinds of model runs could be elaborated:

- Short term studies dedicated to physico-chemical processes and focussed on the simulation of the EMEP field campaigns. Use of these data will allow the investigation of new parametrisations in the models.
- A one year study (year to be chosen) to assess the current capacity of CTMs for simulating the impact of changes in emissions.

The project will be coordinated by the JRC and will be organised under the TFMM umbrella. Modelling teams interested in participating to the project were invited to contact Philippe Thunis ([philippe.thunis@jrc.ec.europa.eu](mailto:philippe.thunis@jrc.ec.europa.eu)) .

A kick off meeting should be organised in spring 2010 and the project set-up will be presented at the next TFMM annual meeting

***Next TFMM meeting: Cyprus (Larnaca) 13<sup>th</sup> -14<sup>th</sup> may 2010***  
***Joint meeting with TFEIP : 12<sup>th</sup> May (Larnaca)***

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