

Progress in EMEP activities in 2016 and future work:

Measurements and modelling
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Joint EMEP SB & WGE, Geneva Sept 14th 2016

Convention on Long-range Transboundary Air Pollution

emep

Co-operative programme for monitoring and
evaluation of the long-range transmissions
of air pollutants in Europe



Main activities in 2015-2016

▶ Meetings

- ▶ Eurodelta-Trend Workshop, Nov. 2015, Paris, FR
- ▶ EMEP/AMAP workshop, Feb 2016, Postdam, DE
- ▶ Annual meeting, May 2016, Utrecht, NL

▶ Main activities

- ▶ Monitoring Strategy
 - ▶ QA/QC & Reporting updates
 - ▶ HM&POPs Modelling
 - ▶ Towards finer scales
 - ▶ National case studies
 - ▶ Main Pollutants Modelling
 - ▶ Urban downscaling
 - ▶ Eurodelta-Trends
 - ▶ Other Highlights
 - ▶ Trend Assessment
 - ▶ SVOCs
 - ▶ Twin urban/rural
 - ▶ Future campaigns
 - ▶ Mandate
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Monitoring Strategy

- ▶ Fall 2016 Workshop in Oslo
 - ▶ QA/QC
 - ▶ Reporting templates and tools (coll. GAW, ACTRIS)
- ▶ POP passive measurement campaign
 - ▶ 39 sites in 39 countries

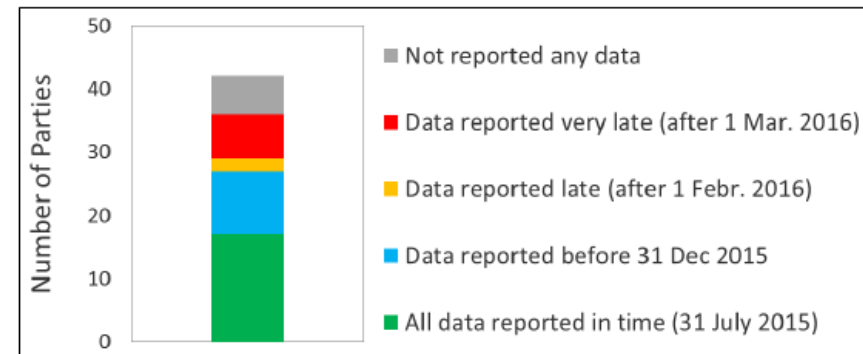
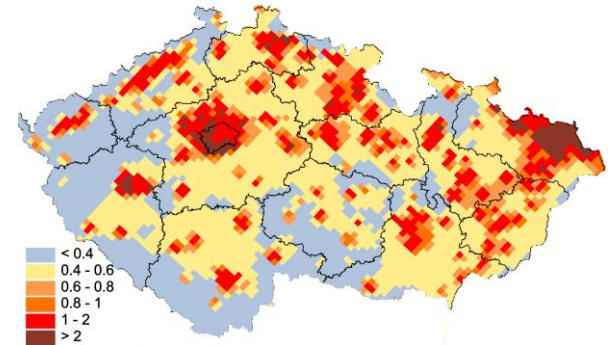


Figure 10.3: Submission of 2014 data to EMEP/CCC.

Submission of 2014 to CCC
EMEP MSCW/CCC Status Report 1, 2016, fig 10.3

Development of EMEP models: MSC-E

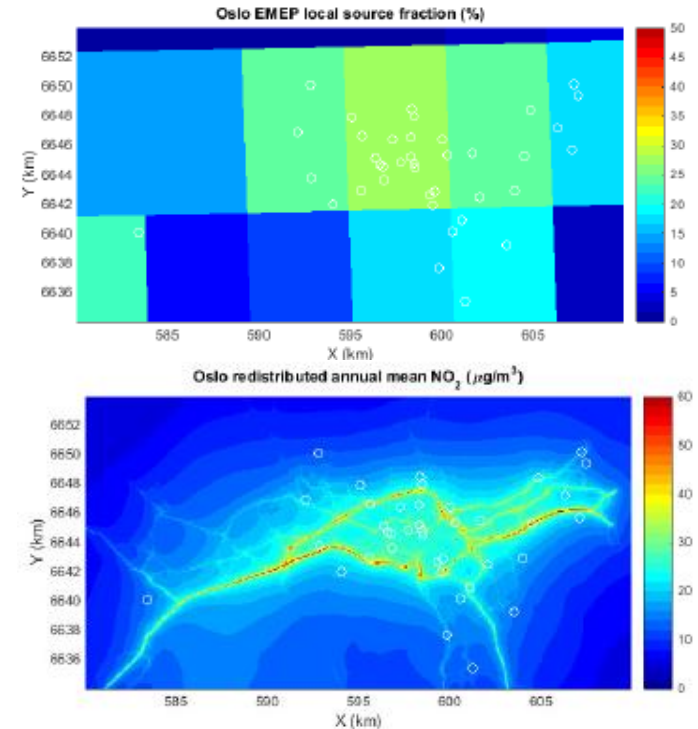
- ▶ New EMEP grid
- ▶ National Case studies
 - ▶ Completed: Pb: Belarus
 - ▶ Ongoing:
 - UK (Pb)
 - Poland (Cd)
 - BaP Prague (follow-up earlier HM assessment)
- ▶ GLEMOS,
 - ▶ inc HTAP & outreach (AMAP, UNEP/Minamata, Stockholm Convention, Baltic Marine Environment)



BaP, Czech Republic, 2013
EMEP-MCSE Tech Report v3, 2016, Fig 2.19

Development of EMEP models: MSC-W

- ▶ Urban downscaling accounting for local/remote origin (no chemistry)
- ▶ Climate impact of Goteborg protocol



Oslo: Annual mean NO₂ of local origin
EMEP MSCW/CCC Status Report 1, 2016, fig 4.2

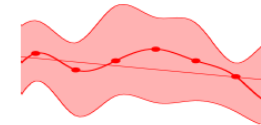
Air Pollution Trends in the EMEP Region

- ▶ TFMM Trend Report published May 2016
 - ▶ join with MSC-E, MSC-W and CCC,
 - ▶ with contribution from CEIP
- ▶ Ozone
 - ▶ Flat trend for annual mean (1990-2012)
 - ▶ 10% reduction in the amplitude of peaks (1990-2012)
 - ▶ 20% reduction in the number of 50ppb exceedances (1990-2012)
 - ▶ 30% and 37% reduction of SOMO35 and AOT40 (2002-2012)
- ▶ Sulphur & Nitrogen compounds:
 - ▶ 60 to 90% reduction for S (1990-2012)
 - ▶ 30 to 40% reduction for N (1990-2012)
 - ▶ 30% reductions of PM10 & PM2.5 (1990-2012)
 - ▶ Flattening of the trend for reduced N over past 10 yrs
- ▶ HM&POP
 - ▶ 60 to 80% reductions for Pb, Cd, HCB
 - ▶ 30% for Hg & BaP (flat trend over recent years)
- ▶ Important ongoing work on modelled trends (Eurodelta-Trends):
 - ▶ Attribution & impact studies

EMEPCCC-Report 1/2016

EMEP Co-operative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe

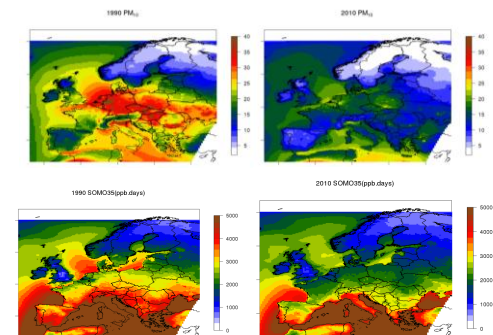
Air pollution trends in the EMEP region between 1990 and 2012



Download report using a barcode scanner:

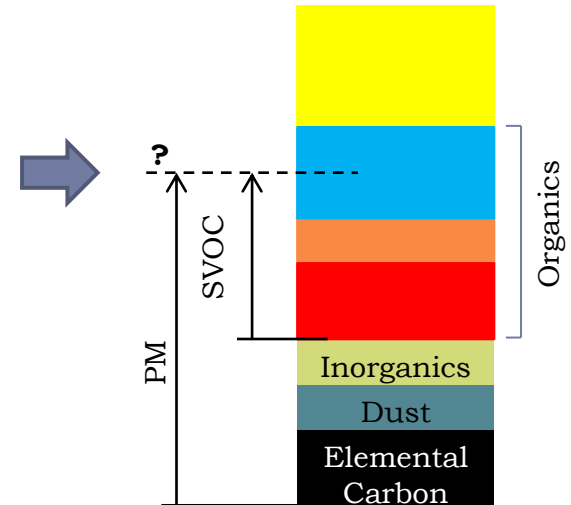


Joint Report of the EMEP Task Force on Measurements and Modelling (TFMM), Chemical Co-ordinating Centre (CCC), Meteorological Synthesizing Centre-East (MSC-E), Meteorological Synthesizing Centre-West (MSC-W)



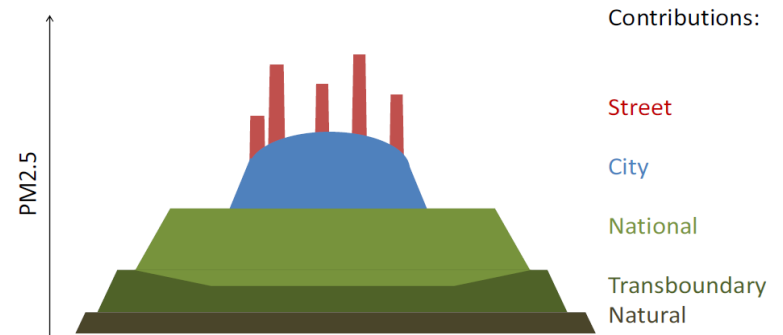
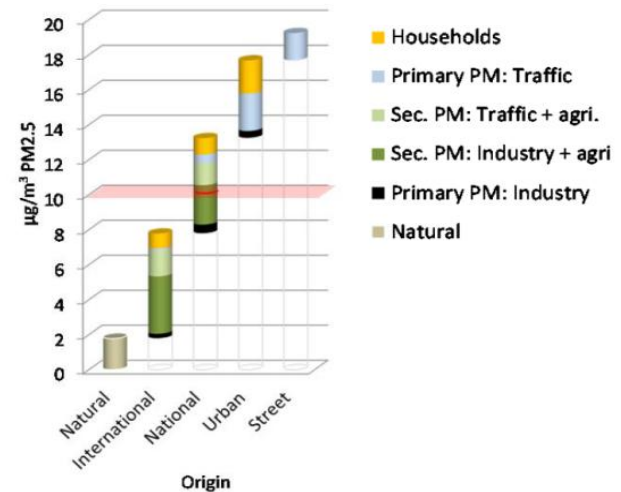
Semi-volatile organic compounds (SVOCs), condensable/filterable

- ▶ Are SVOCs included or partly included in PM emission factors ?
 - ▶ Yes => no action required from modellers
 - ▶ No
 - ▶ Work on revised EF (back to « yes »)
 - ▶ Deliver condensable fraction: need to discuss between modellers/emission to define required information (volatility of SVOCs)
- ▶ Scoping document
 - ▶ Lead B. Bessagnet, France
 - ▶ Technical document finalized
 - ▶ => executive summary (in progress)
- ▶ Way forward:
 - ▶ TF-EIP:
 - ▶ Assess what is being reported
 - ▶ TF-MM:
 - ▶ Identify options to include condensables in models
 - ▶ Case Study (ongoing): for road transportation



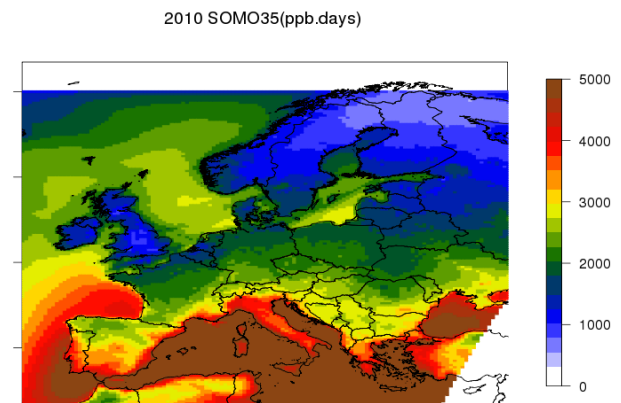
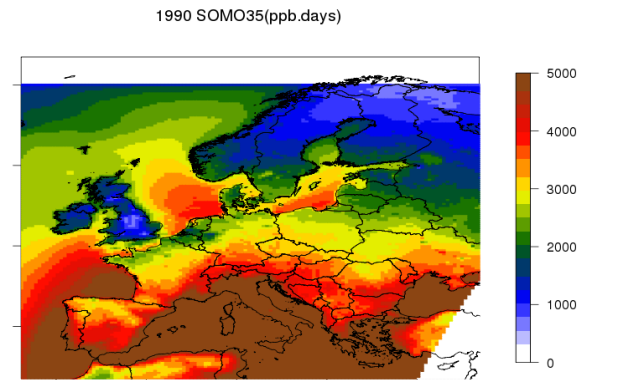
Long range transport contribution to urban pollution

- ▶ “... many European cities will be unable to meet WHO guideline levels for air pollutants through local action alone”, CLRTAP AR, 2016
- ▶ How can TFMM contribute to better assess this contribution?
 - ▶ Twin urban/rural sites
 - ▶ Lenschow & backtrajectories
 - ▶ Source apportionment
 - ▶ Urban increments
 - ▶ Urban Source/Receptor modelling



Focused Case Studies - IOPs

- ▶ Ozone in the mediterranean
 - ▶ Based on existing data and Eurodelta-Trends model exercise
- ▶ Field experiments: 2 options being considered:
 - ▶ **Aerosol characterization:** offline ACSM analysis with a focus on Eastern Europe (in coll. With Actris)
 - ▶ **Assessing climate impact of air quality policies :** better constrain measurment & modelling of BC



Wrap-up

- ▶ **EMEP Modelling&Measurement Strategy**
 - ▶ HM case studies
 - ▶ QA/QC & reporting workshop (Oslo, 2016)

 - ▶ **Interest of LRT impact on urban scale:**
 - ▶ Modelling NO₂, BaP
 - ▶ Work on twin sites, looking for relevant involvement of models

 - ▶ **Trends**
 - ▶ Attribution
 - ▶ Impacts studies (WGE)

 - ▶ **Modelling uncertainties**
 - ▶ SVOCs / Condensables-filterable

 - ▶ **Field campainings**
 - ▶ Ozone
 - ▶ Aerosol characterization
 - ▶ BC model/measurement

 - ▶ **TFMM 2017 meeting**
 - ▶ hosted by Czech Republic, May 3-5, Prague
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