TFMM’s trend assessment

Motivations

Policy effectiveness: lessons learnt

- How 20 years of effort in modelling and measurement can help supporting 20 years of efforts in emission mitigation

Rationale

- A synthesis of information produced by the **EMEP centers** and by **national experts** gathering **observed and modeled** trends

Objectives

- Assess AQ evolution as documented by EMEP sites
  - Link with EEA/urban & TOAR/global O3
- Capability of models to capture trends
  => confidence in emissions (link with EIP)
- Sensitivity analyses
  ⇒Response of CTMs to historical changes in emission (link with IAM)
- Quantify relative contribution of
  - Emission/Meteorology/Hemispheric Transport
  - link with HTAP (& CCMI)

Outcome:

- TFMM Report / CLRTAP Assessment (?) / Special issue

Observed trends

Key points:

- Variables
- Periods (1992-2012 and 2002 – 2012)
- Data sets temporal resolution
- Analytical techniques for trend estimate (tools provided by centers)
- **Stations selection / Data filtering: require national expert feedback**

Process:

- Discussion initiated in Bologna (Spring 2014) and in depth at the Paris Workshop (fall 2014).
- Now collecting feedback from experts on draft methodology and site selection proposed by CCC on the TFMM wiki
- Consensus on methodology to be drafted by TFMM chairs: 20/3

Modelling: Eurodelta-Trends

20-yr hindcast in several tiers addressing different questions:

- 1A: model/obs comparison in 1990/2000/2010
- 1B: efficiency of European Emission reductions
- 2: sensitivity to LRT
- 3: 20-yr trends and contribution of meteorology

Methodology:

- Participating models:
  - EMEP + CAMx, CHIMERE, CMAQ, LOTOS, MINNI, POLAIR
- Emissions:
  - as used in EMEP models + gapfilled with GAINS trend over the 1990s for PPM
- Input centralised by INERIS, output in DeltaTool

Time line

- Preliminary tier 1 to be presented in Krakow (May 2015)
- Tier 2&3 completed before end of 2015