TFMM European Trend Assessment of Particulate Matter

TFMM, MSC-W, CCC, Eurodelta3, EEA
Average trends, 2002-2012

Solid line: Measurements
Dotted line: EMEP model

Model results show that the PM trends are largely due to the decrease in SIA.

<table>
<thead>
<tr>
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<th>Model</th>
<th>Observed</th>
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<tbody>
<tr>
<td>PM$_{10}$</td>
<td>-2.6% yr</td>
<td>2.4% / yr</td>
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<tr>
<td>PM$_{2.5}$</td>
<td>-3.7% / yr</td>
<td>3.0% / yr</td>
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</tbody>
</table>
Model calculated and measured Sen slope for 2002-2012 (ug/m³/yr)

Observation trends: ▲ significant ○ insignificant

Total PM$_{10}$

Total PM$_{2.5}$
the trend is more pronounced close to the sources (traffic, industrial and background urban sites) than in rural areas
National contributions, ex of DE43

![Particle Mass-concentration graph](image)

Figure 14 Hohenpeissenberg PM$_{10}$ time series
Case study: Montseny (ES1778): Trends of PM Source contributions (2002-2012)
PM$_{2.5}$ Exposure

- Average population weighted exposure by country
- 6-model median ensemble in 1990 and 2010

1990

2010
PM2.5 Exposure

- Change in exposure between 1990 and 2010
  - Left: relative change in the EMEP model (%)
  - Right: std dev. of the relative change in the 6-model ensemble