EMEP/CCC

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Outline

- Status on routine work (implementation and status 2018)
- Workplan 2020-2021 items:
  - *1.1.1.3 Black carbon assessment: Intensive measurement*
  - *1.1.1.4 Investigating monitoring of chemicals of emerging concern*
  - *1.3.1. Near real-time data provision*
- Other ongoing activities important for the Convention

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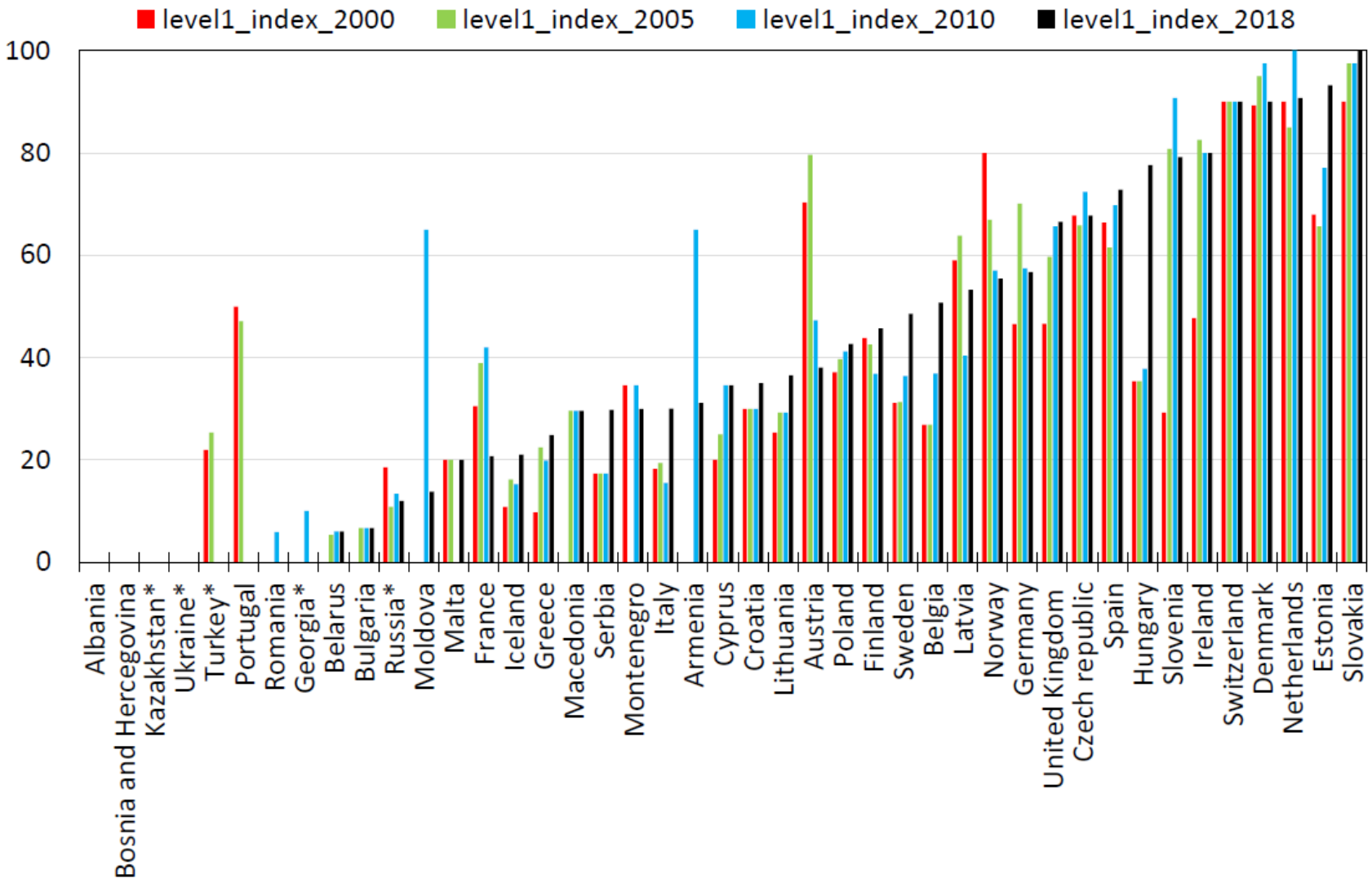
Norwegian Institute for Air Research

Convention on Long Range Transboundary Air Pollution
emep

Implementation of the monitoring strategy (level 1)

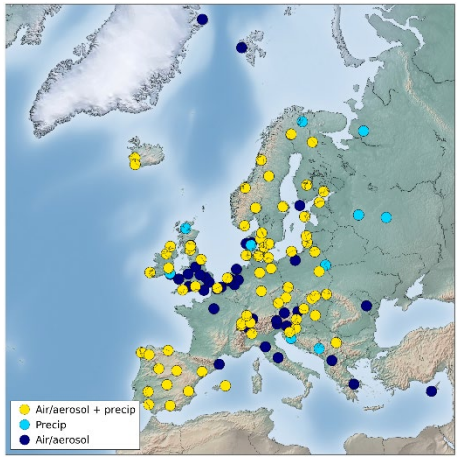


	since 2000	since 2010
Parties with **improved** monitoring	**63 %**	**40 %**
Parties with **reduced** monitoring	**19 %**	**33 %**

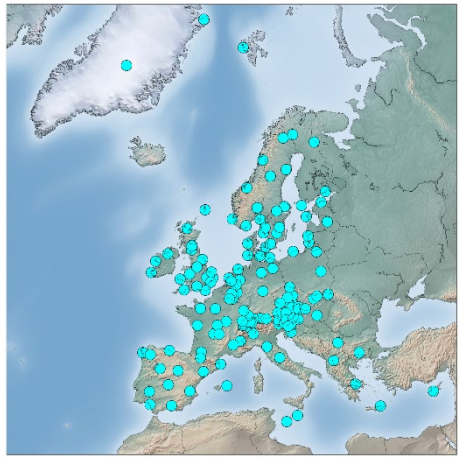
Net improvement

Measurement sites in 2018

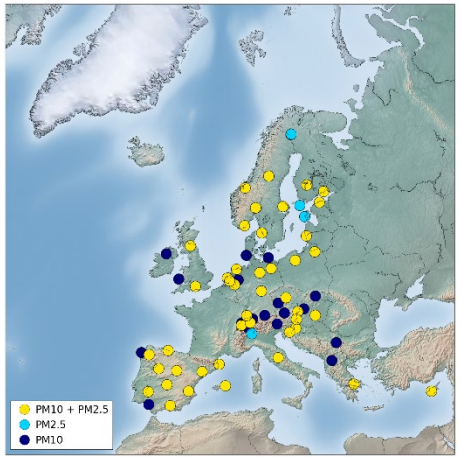
Inorg.:120 stations from 33 Parties



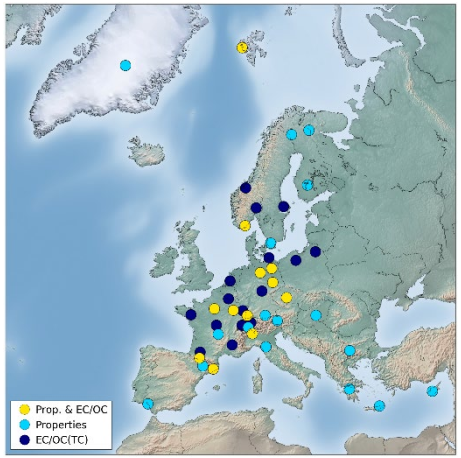
Ozone, 141 sites from 28 Parties



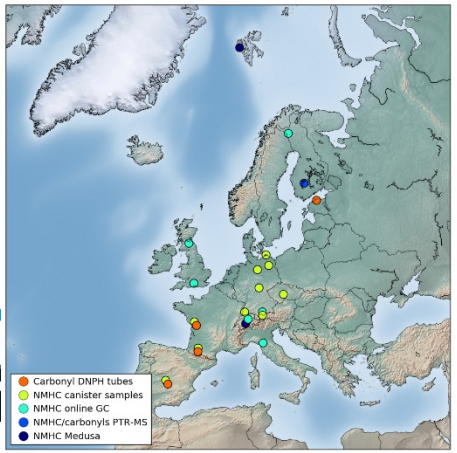
PM: 68 sites from 22 Parties



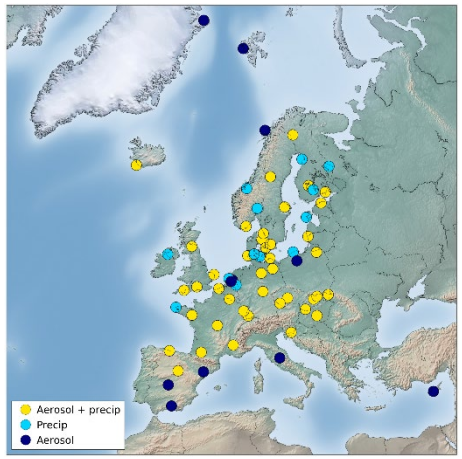
Aerosol prop: 45 sites from 17 Parties



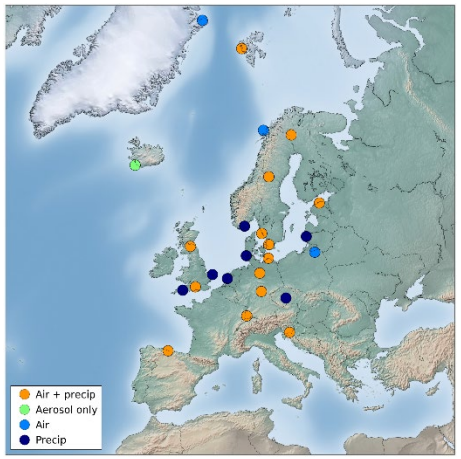
VOC: 20 sites from 10 Parties



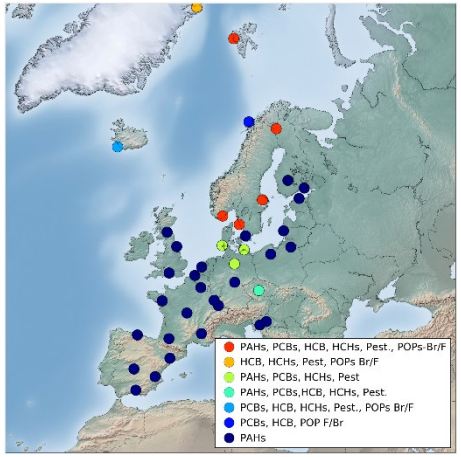
HM: 65 sites from 20 Parties



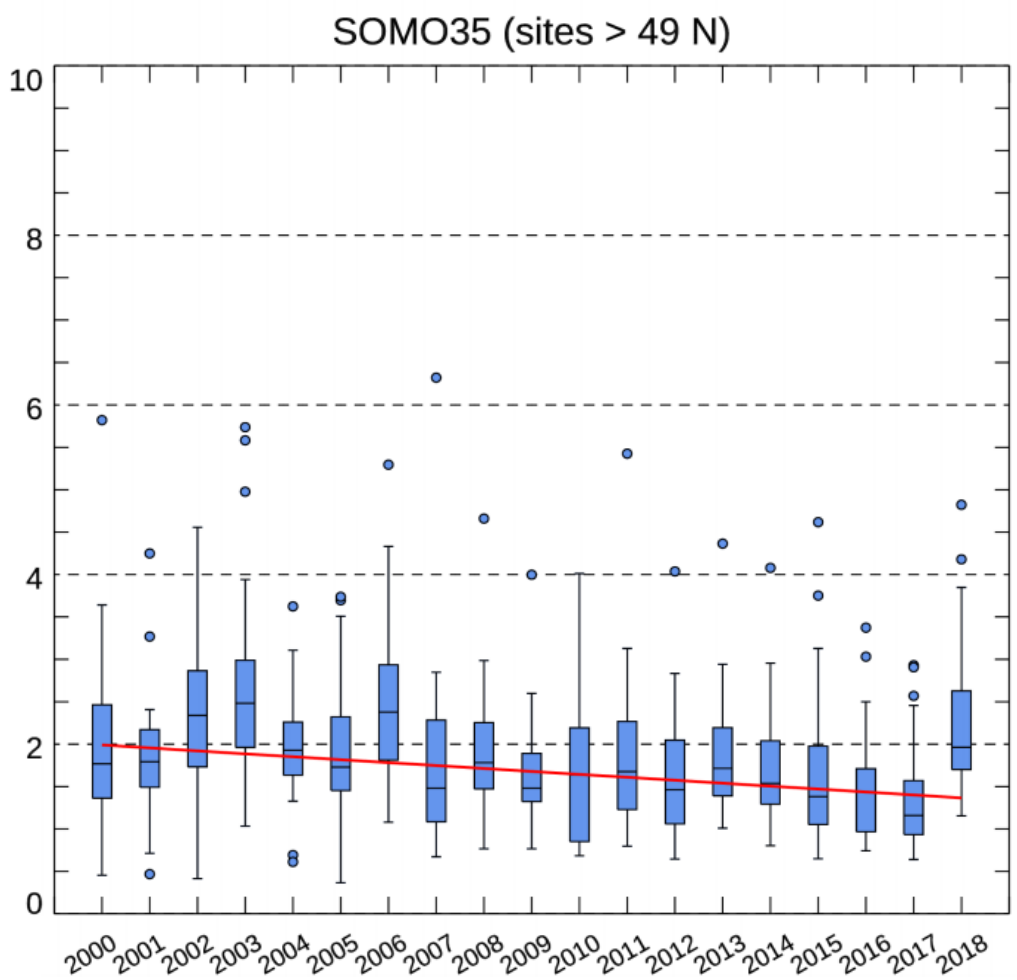
Hg: 25 sites from 13 Parties



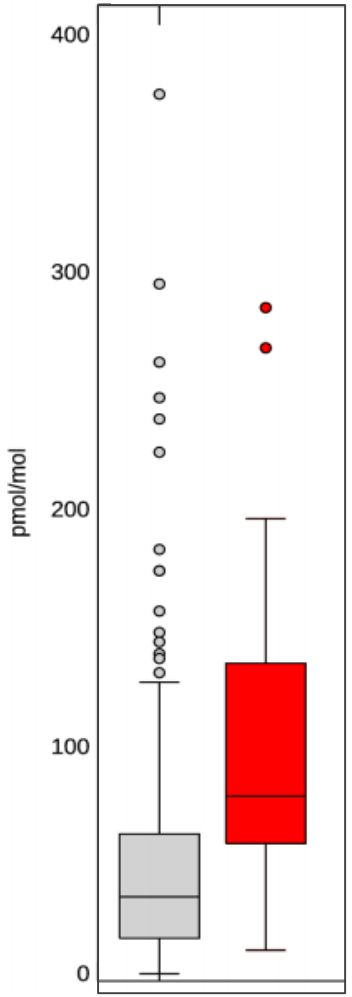
POPs: 39 sites from 17 Parties



Air pollution during the summer heat wave 2018 - ozone and isoprene



Isoprene at Waldhof
2000-2017 vs 2018



During April/May-August: Northern and central part of Europe experienced a persistent heat wave. Can cause:

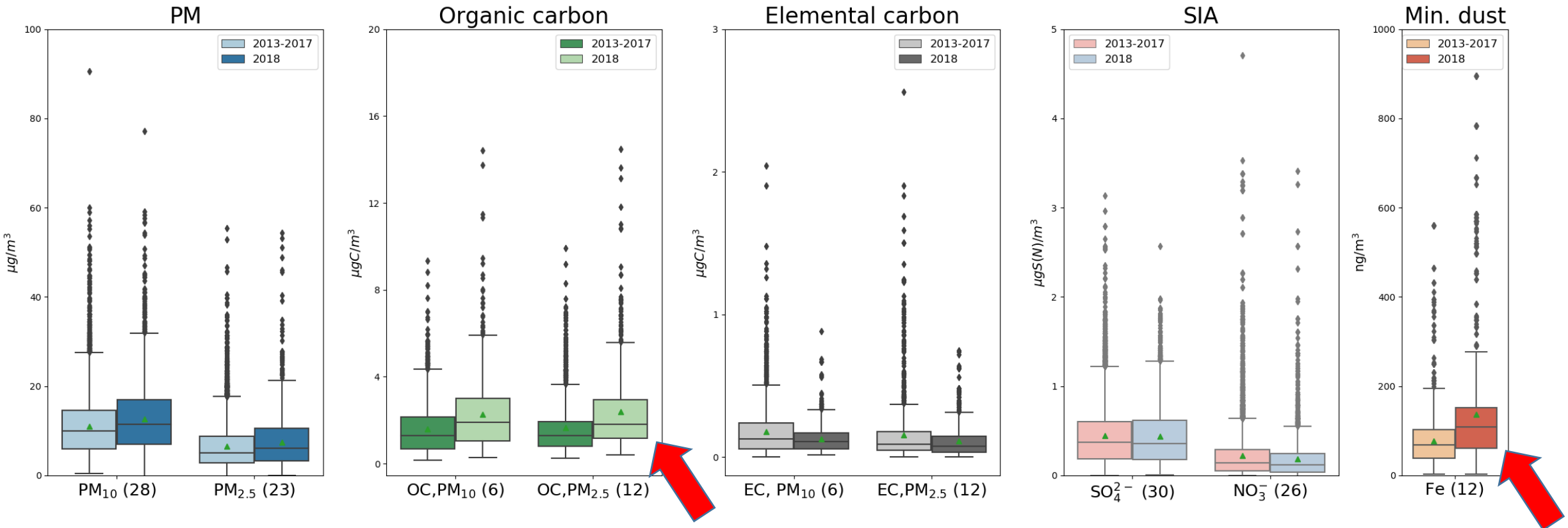
- increased photochemistry
- Increased biogenic emissions
- Closed stomata: Less uptake of ozone

- A downward trend in SOMO35, but 2018 were clearly elevated (similar for AOT40)

- Isoprene levels were elevated in 2018, correlated to increased temperature

Air pollution during the summer heat wave 2018 -aerosols

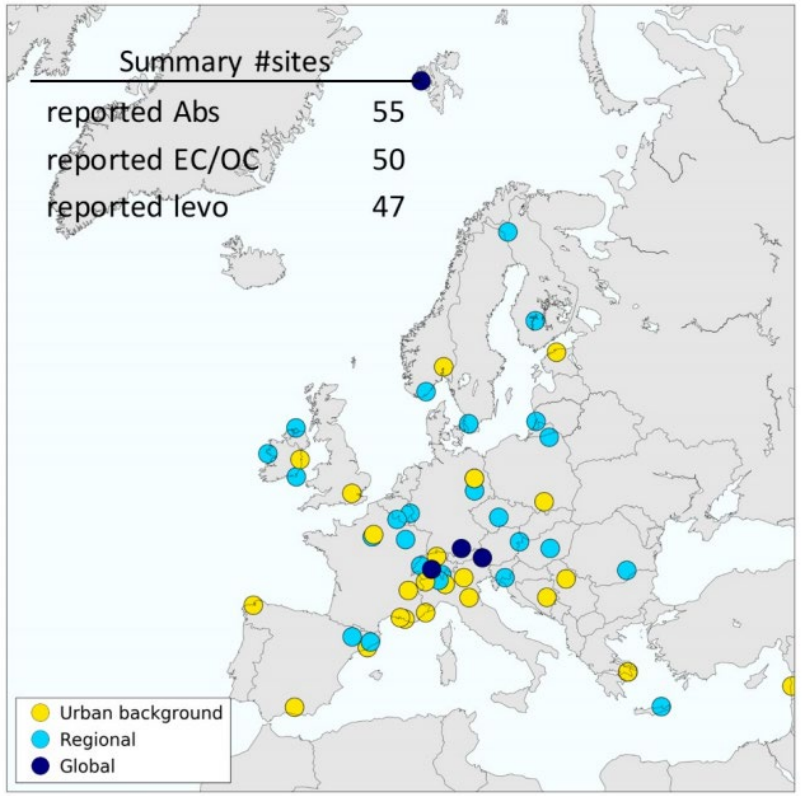
- PM_{10} and $PM_{2.5}$ levels in Northern Europe were generally higher summer 2018 compared to preceding years.
- Mainly attributed to fine mode **OC (organic carbon)** and **mineral dust -source regions both within and outside of Europe**
- Unchanged EC levels and reduced BB (biomass burning) and PBAP (primary biological aerosol particles) tracer levels point to **BSOA (biogenic secondary organic aerosol) formation as the explanation of the increased level of fine OM**

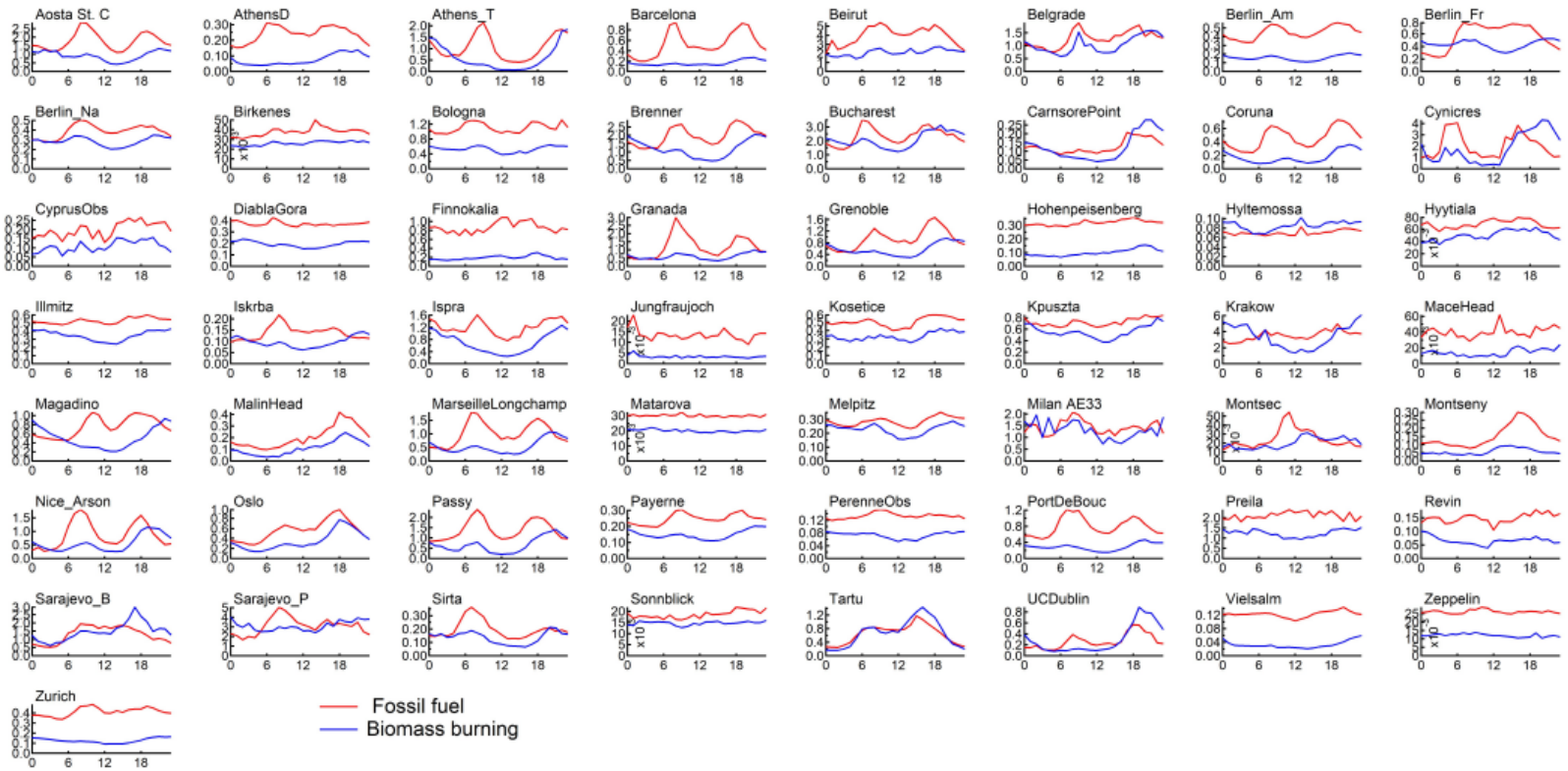


The winter 2017/2018 intensive measurement period

-apportionment of equivalent black carbon (EBC) into fossil and biomass fractions

- Time series of the EBC fractions exhibit clear diurnal patterns for the urban sites while low diurnal variations at background sites
- Biomass burning contributes significantly to all station types, thus a regional as well as a local problem
- Data that are available to the community on request.





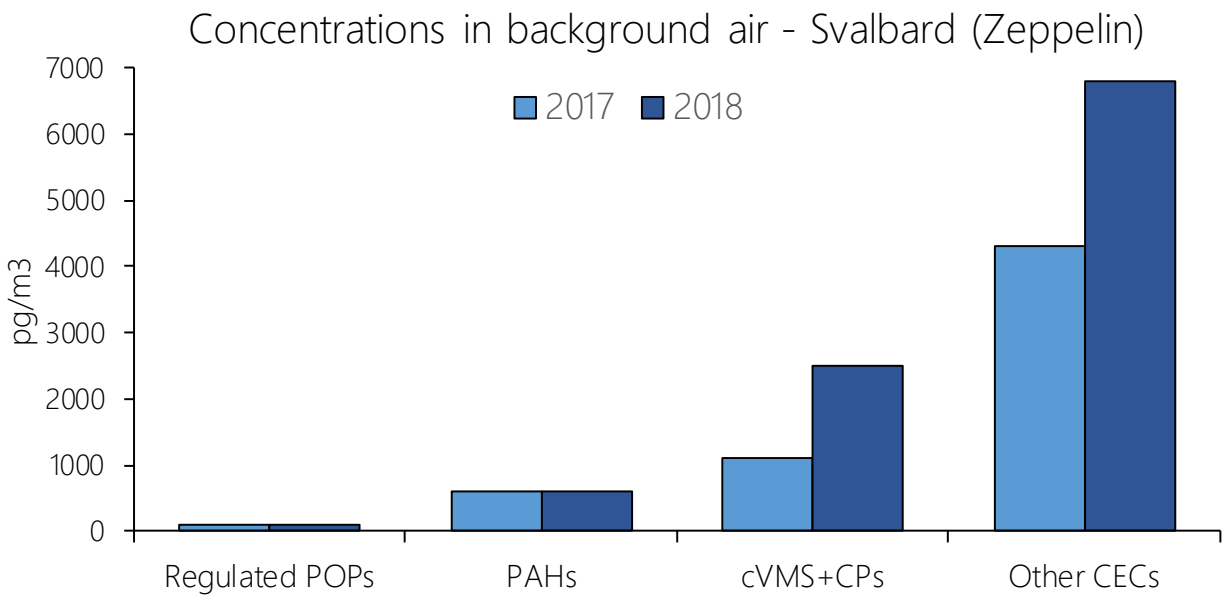
Contaminants of Emerging Concern (CECs)

CEC: Pollutants detected in the environment, which might cause environmental or health impacts, AND typically are currently not regulated

- Many CECs are detected at high concentrations in air
- Long-range transport of CECs occurs, but local sources difficult to assess
- Sampling and analytical challenges
- require guidance and inter-calibration
- International cooperation necessary (i.e. NORMAN)
- **Workshop suggested for autumn 2020 but postponed**

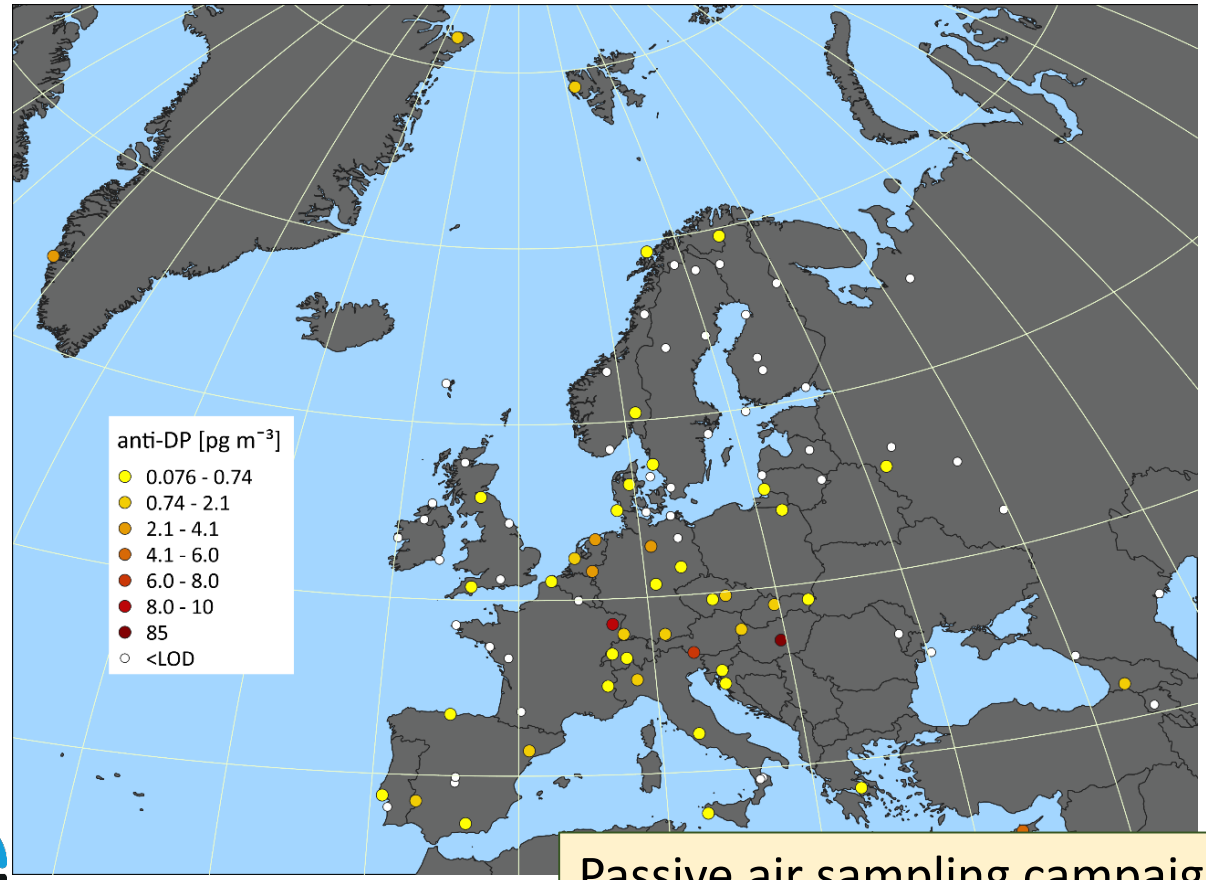
Examples of component groups:

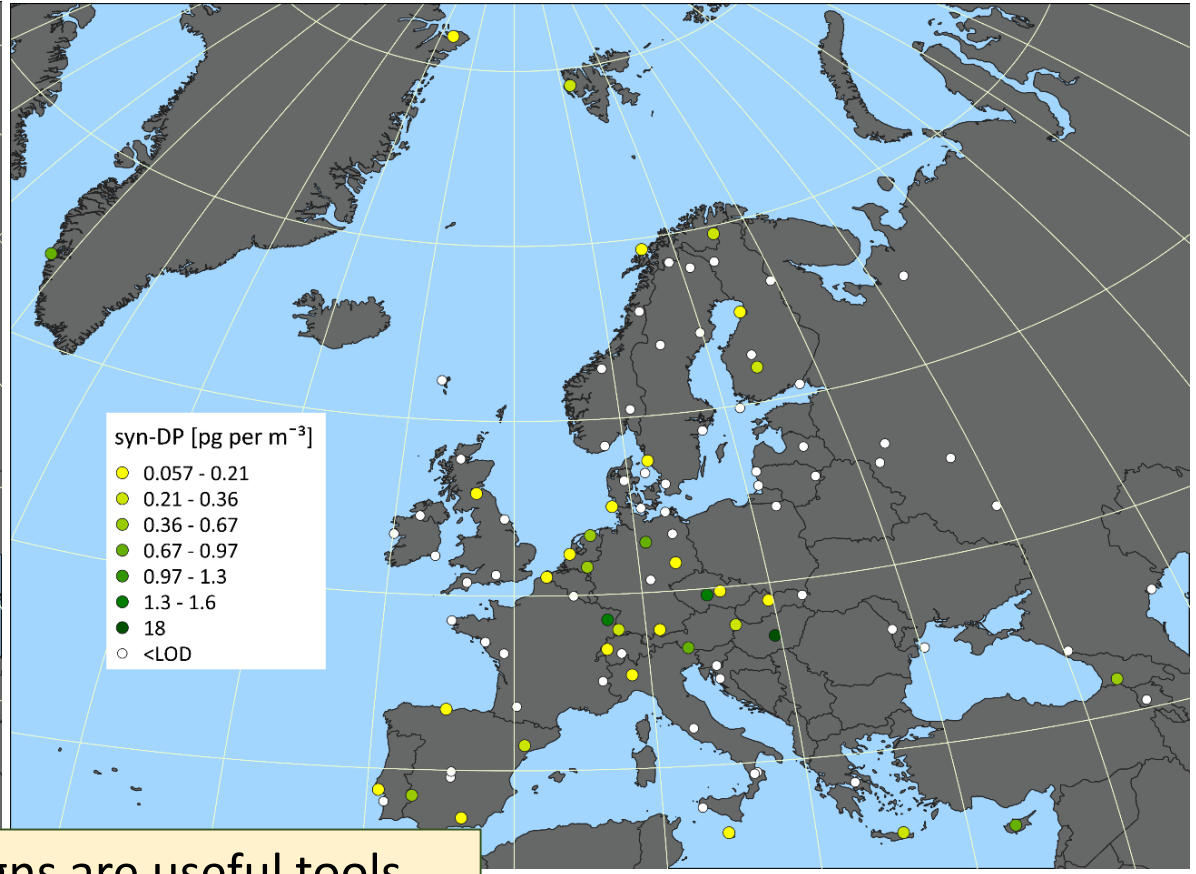
- cVMS (cyclic volatile methyl siloxanes)
- S/MCCPs (Short and medium chain chlorinated paraffins)
- Volatile PFAS
- Phthalates
- New brominated flame retardants
- Organophosphorous flame retardants
- Dechloranes
- Bisphenols
- (Suspect/non-target screening)



Monitoring of CECs in EMEP

Dechlorane Plus in European background air
Estimated concentrations in air from passive air sampling





Passive air sampling campaigns are useful tools for identifying CECs important for EMEP

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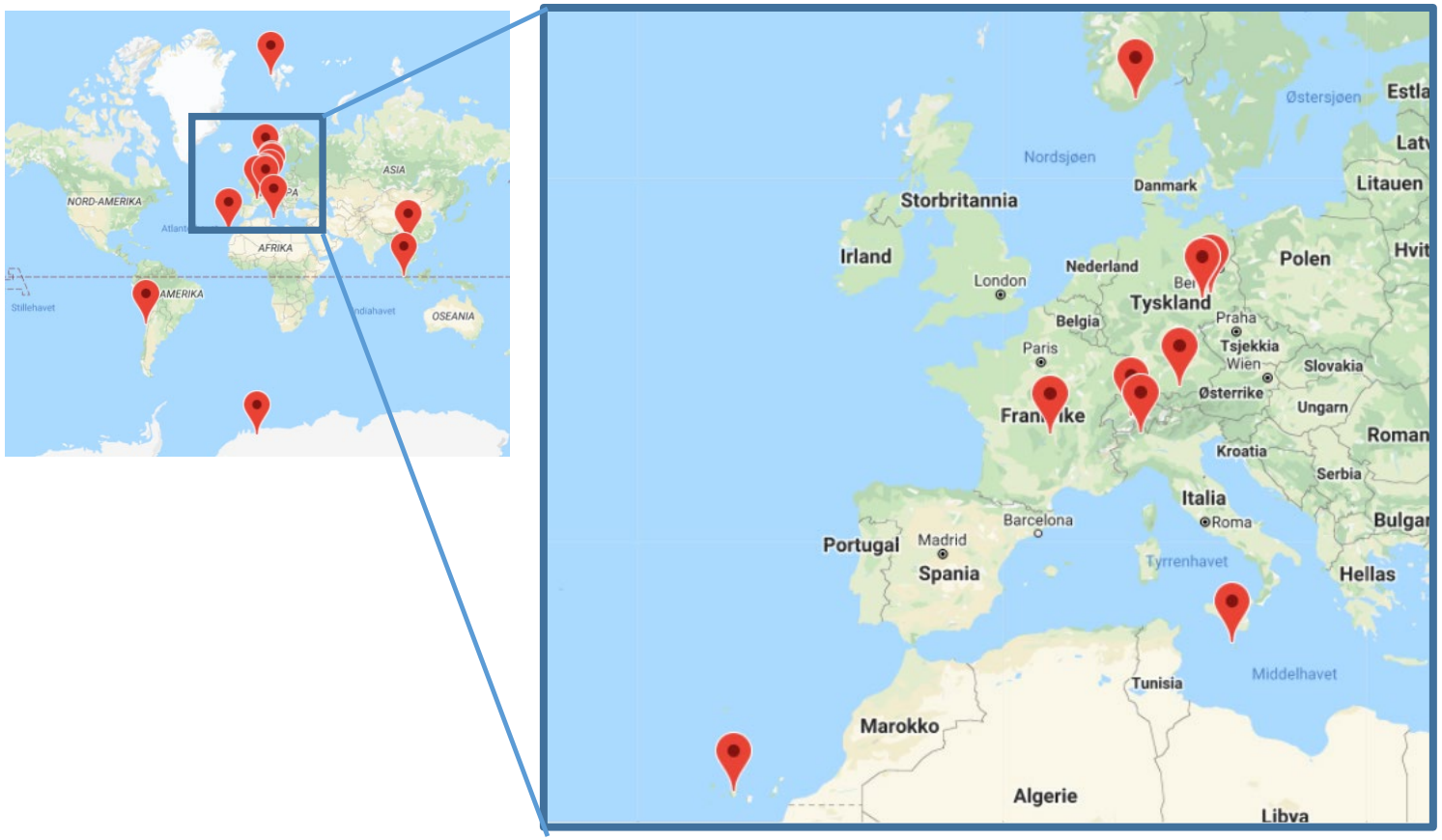
Implementation of NRT (EMEP/GAW/ACTRIS)



Operational in 2020:

- 16 sites
- 14 component types
- 6 instrument types
- ~1600 datasets

Still no contract between Copernicus and EMEP. However, data from many EMEP stations are used through the EEA data delivery

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Key challenges and work items:

- Stable monitoring program, some improvements on level 2, but a need to focus on improving coverage and participation from EECCA
- Data flow and dissemination improved considerably the later years incl protocols etc (I.e. ENVRI-FAIR)
  - PID on data now being implemented, and licensing of EMEP data under consideration
- EMEP observations in support of other policy frameworks (Minamata, Stockholm, AQFD..)
- ACTRIS to be formally established as an RI (2022?)
- Improvements to the data reporting system
- Developing new web tools to meet individual needs for creating data products from the database (maps, statistics etc)
- Integration getting more important
  - modelers, incl data assimilation and data fusion (WMO/GAW, Copernicus)
  - other observing system (satellites, low cost systems)
  - effects (climate, health, ICPs)
  - local air quality

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