

EMEP measurements in the EECCA region

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EMEP strategy 2010-2019

✓ New monitoring strategy adopted at the EMEP SB in sept 2009

<http://www.unece.org/env/documents/2009/EB/ge1/ece.eb.air.ge.1.2009.15.e.pdf>

✓ Key issues:

- Linkage of scales (local versus regional, inter-continental transport, global change)
- Close cooperation with supporting frameworks like EC AQFD, ICPs, AMAP, HELCOM, OSPARCOM, WMO/GAW, The UN Convention on Climate Change, Stockholm Convention -UNEP.
- Close links with the research community

Monitoring programme:

Level 1

- Main ions in precipitation and in air
- heavy metals in precipitations
- ozone
- gas particle nitrogen ratios (low cost)
- PM₁₀ and PM_{2.5} mass
- meteorology

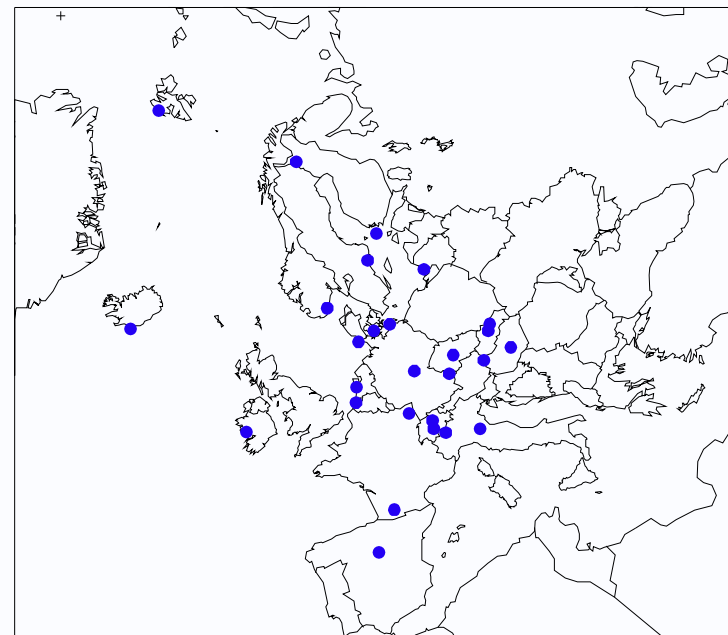
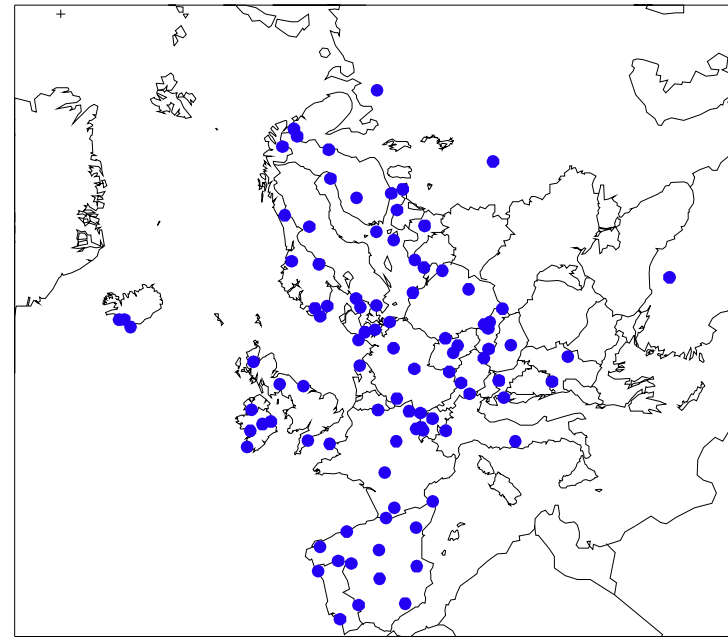
at ca 125 sites

Level 2, supersite (joint EMEP/GAW)

- PM composition (EC/OC, mineral dust)
- Aerosol physical and optical properties
- CH₄
- Tracers (CO and halocarbons)
- POPs
- Heavy metals in air and aerosols
- VOC

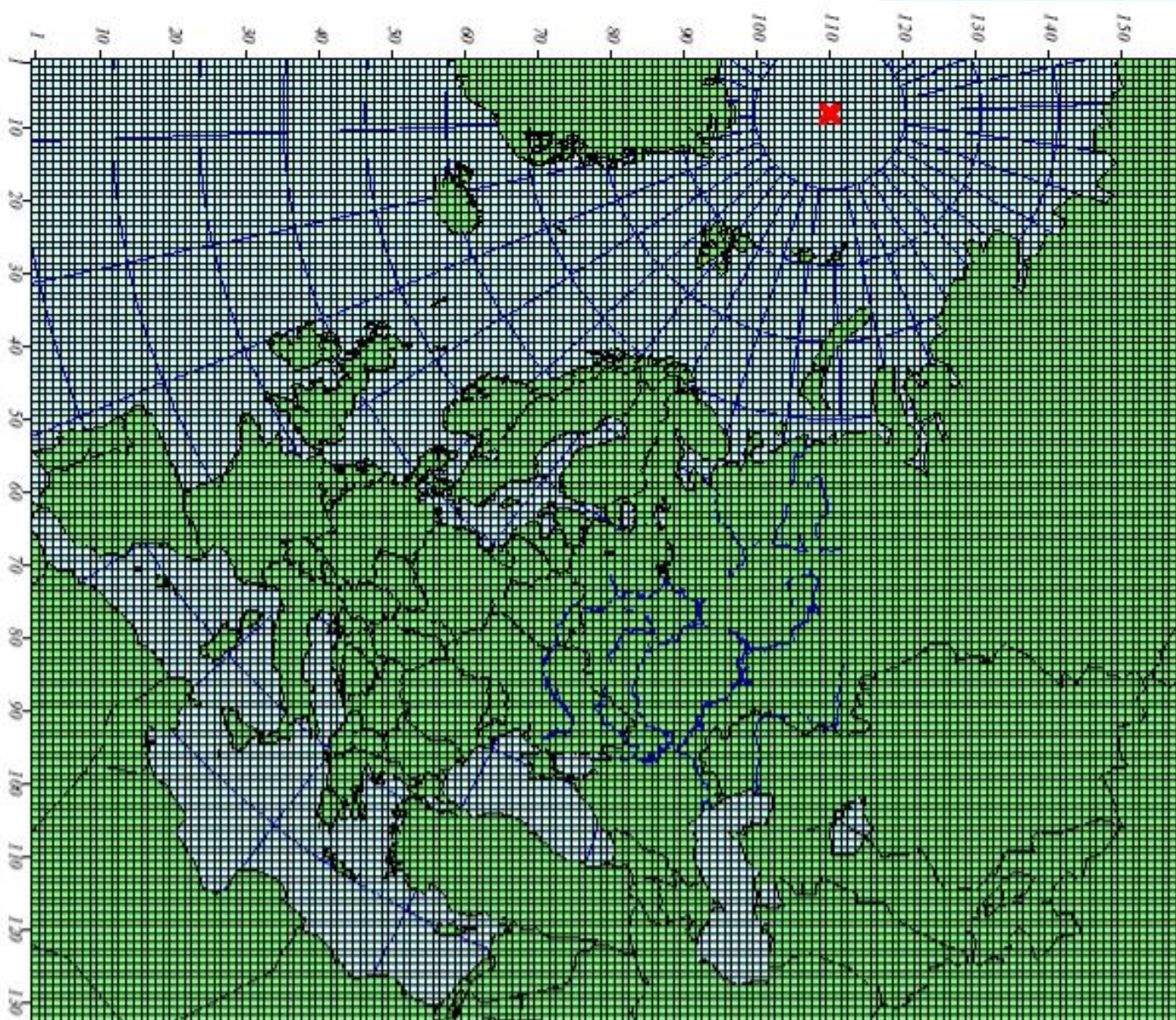
+ all level 1 activities

Ca 20 sites



Both levels are mandatory by all Parties

Extended EMEP grid



Model and emission reporting now include Central Asia and Caucasus

Though not much measurements to validate the model in the EECCA region


Nations	Stations (Info)	Projects (Info)	Instrument (Info)	Components (Info)	Matrix (Info)
All	All	All	All	All	All
Austria	Achenkirch	NILU	abs_solution	1_pentene	aerosol
Belarus	Aliartos	EMEP	abs_tube	2+3methylheptan	air
Belgium	Ammarnäs	HELCOM	ads_tube	acenaphthene	air+aerosol
Bosnia and Hercegovina	Andøya (Alomar)	CREATE	aethalometer	acenaphthylene	instrument
Bulgaria	Anholt	EUSAAR	air_UK	acetate	met
Croatia	Ansbach	GAW-WDCA	amalg_tube	acidity	pm1

From 2000 To 2009 [Show map](#) [List datasets](#) [Reset](#)

Available datasets: 801



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Additional Resources

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- [Measurement network \(EMEP\)](#)
- [Measurement network \(GAW\)](#)
- [Site descriptions](#)
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- [EMEP/CCC reports](#)
- [Presentations](#)
- [Quality assurance](#)
- [EMEP manual](#)
- [EMEP laboratory intercomparisons](#)

EECCA sites (known by CCC):

- ✓ Russia and Belarus have a few EMEP level 1 sites (not complete though)
- ✓ EMEP level 1 (main ions in air and precip + ozone) at one site in Moldova, Georgia, Armenia og Kazakhstan has been established. Measurements from jan 2008 and later (Support from Norway and UNECE)

Further on:

- Ø Extended POP monitoring in air+aerosol for one year will start in july 2009 in Kazakhstan and Moldova
- Ø One year monitoring of PM₁₀ and EC/OC at all the four EMEP sites (start in 2010)
- ✓ One EMEP site in Ukraine will be established in near future (contribution in kind)
- ✓ One sites in Kirgizstan (Teplokluchenka) for aerosols (US ABC)
- ✓ Tiksi in Russian Arctic (cooperation with Finland, Canada and AMAP)

New EMEP sites in the EECCA region



The new sites in operation

Georgia: Abastumani



Kazakhstan: Borovoye



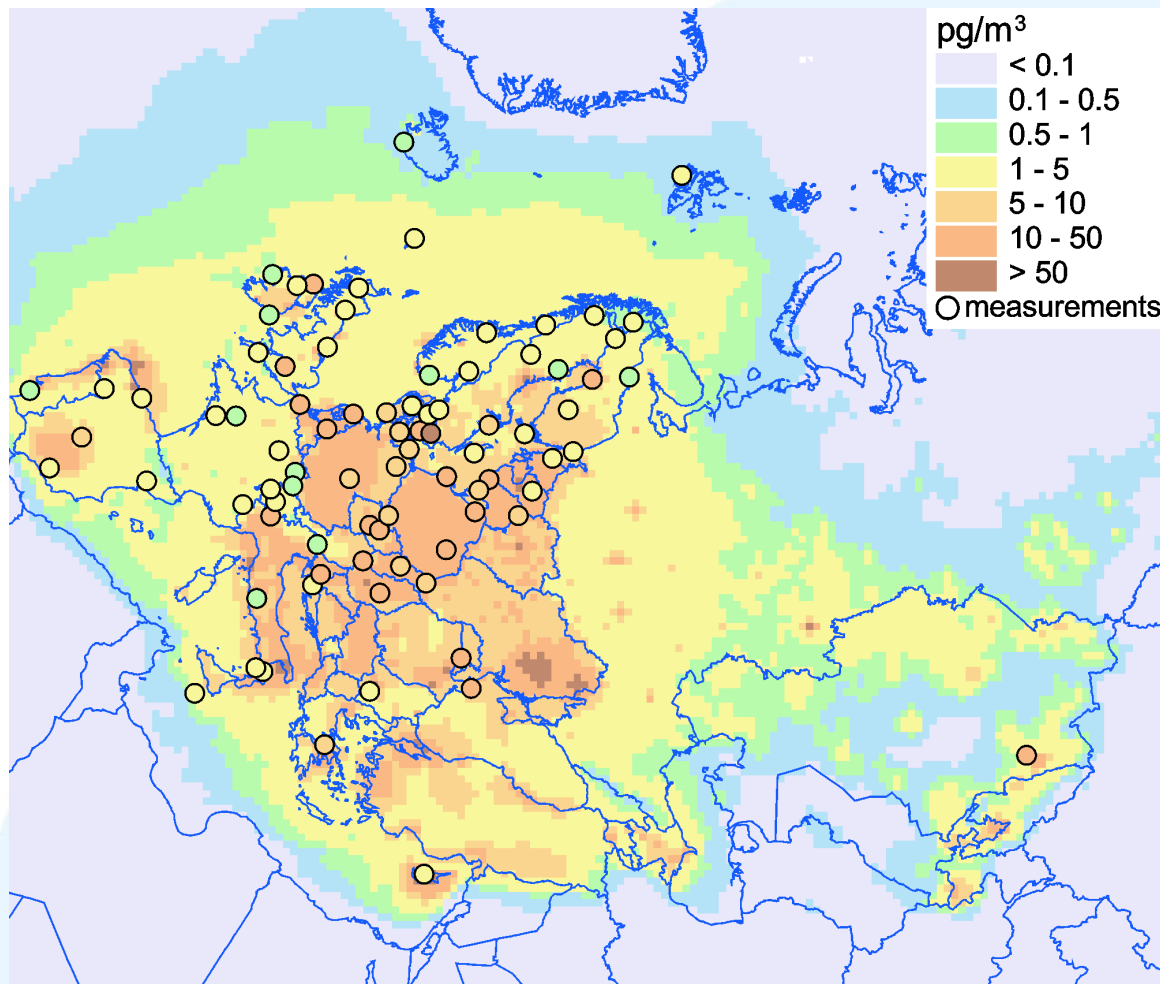
Moldova: Leovo



Armenia: Amberd



Some campaign data are available, POPs:



Spatial distribution of modelled air concentrations of B[a]P in gaseous phase and measurement data of passive sampling campaign of EMEP carried out in 2006, pg/m^3

EMEP status report 4/2009

Challenges for monitoring in EECCA

Level 1

- ✓ Difficulties to find national resources and long term commitments
- ✓ Established sites lack a few parameters to get a complete measurement program of level 1. Especially a lack of ozone and PM
- ✓ Quality assurance

Level 2

- ✓ Costly measurements
- ✓ A need for more involvement of the scientific communities

How to get further improvements

✓ Improve **data coverage**

- ü Extended cooperation with regional and global programmes
- ü Include passive sampling as a possible introduction to POP measurement for new Parties
- ü Bilateral co-operation / development money is relatively easy to get if the local government commits to sustainability

✓ Better understand the main **sources and transport**

- ü A daily or shorter time resolution needed.
- ü Strengthen link with the research community

✓ Further efforts to improve **data quality**

- ü Lab intercomparison
- ü Training and capacity building
- ü Use the data –increase the availability