



Datasets – air quality

- Air quality monitoring stations in the Helsinki metropolitan area (YTV, 2003)

Station	Description	Parameters	Temporal resolution	Monitoring period (not all parameters included)
Runeberg Street	urban traffic (street canyon)	NOx, PM2.5, PM10	1 hour	Feb 2003 – Dec 2004
Kallio2	urban background	NOx, O3, PM2.5, PM10	1 hour	1999 -
Vallila	urban traffic	NOx, PM2.5, PM10, CO, SO2	1 hour	1976 -
Leppävaara	suburban traffic	NOx, PM10, CO, SO2	1 hour	1996 -
Tikkurila2	suburban bg	O3	1 hour	1990 -
Tikkurila3	suburban traffic	NOx, PM10, CO	1 hour	1996 -
Töölö	urban traffic (in the middle of a square)	NOx, PM10, TSP, O3, CO, Pb	1 hour	1982 -
Luukki	rural background	NOx, O3, PM10, SO2	1 hour	1987 –



Datasets - traffic

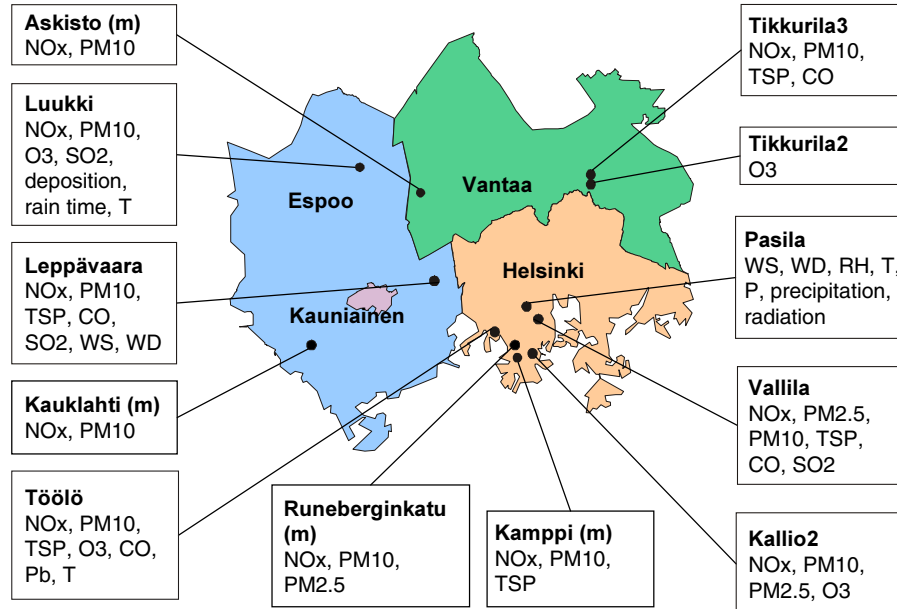
- Traffic counts (2003)

Runeberg Street	Counts and speed for light and heavy vehicles (automatic)
Vallila	Manual counts nearby ? estimations
Leppävaara	Counts and speed for light and heavy vehicles (automatic) nearby ? estimations



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- Air quality monitoring methods (2003)

NOx	Chemiluminescence (Horiba APNA 360)
O3	UV –absorption (Thermo. Env. Model 49/49C)
PM2.5, PM10	β -attenuation (Eberline FH 62 I-R)
CO	IR –absorption (Environnement CO 10M/11M or Horiba APMA 360)
SO2	UV –fluorescence (Thermo. Environ. /Thermo Electron Model 43A)



Datasets – air quality

• AQ monitoring campaigns in the Helsinki metropolitan area

SAPPHIRE

4-6 weeks campaigns in winter and summer 2003 and 2004



Kumpula (SAPPHIRE)

Urban background

- particle number concentration distributions (8-400 nm, DMPS)
- total particle concentration (CPC 3022)

Itäväylä (SAPPHIRE)

Roadside, 2 measurement vans, at distances of 5m ja 60m from Itäväylä (~46860 vehicles/day)

- number concentrations of particles (ELPI, CPC, SMPS?)
- particulate mass and carbon compounds (SDI -and virtual impactors)
- black carbon measured (etalometers)

Kaisaniemi (Sep 2003 – Apr 2004?)

Urban background (roof top)

- NO_x, O₃, PM_{2.5}, PM₁₀

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Datasets – air quality

• EMEP (Co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe)

All stations:

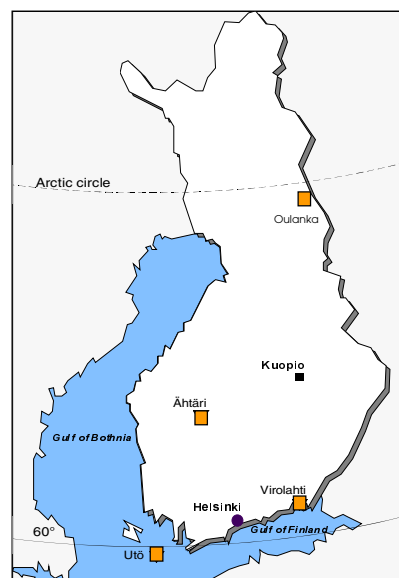
- Daily ion concentrations:
 - sulfate (SO₄²⁻)
 - the sum of nitrate (NO₃⁻) and nitrogen acid (HNO₃)
 - the sum of ammonium (NH₄⁺) and ammonia (NH₃).
- Daily SO₂ and NO₂ concentrations
- Daily precipitation chemistry
- Ozone (O₃) with 1 hour resolution

Virolahti also:

- PM₁₀

Utö also:

- VOC



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Datasets – air quality

- Pallas (<http://fmigaw.fmi.fi/index.html>)

- Continuous measurements:
 - O_3 , SO_2 , CO_2
 - $D_a > 10 \text{ nm}$
 - $D_a > 0.3 \mu\text{m}$
 - Particle size distribution 10 - 450 nm
 - Aerosol scattering coefficient
 - Black carbon
 - Radon-222
 - Solar radiation
 - Surface weather parameters
 - etc.
- 1/week:
 - CO_2 , N_2O , CH_4
- 2/week
 - VOCs
- weekly/monthly
 - Precipitation chemistry

