Assessing Black Carbon (BC) measurements in Europe for Air Quality

eBC provided by filter-based photometers

Aethalometer

Multi-Angle Absorption Photometer (MAAP)

Roadmap for Upscaling Sustainable Interoperable AQMNs-RI Services
General Objective

Developing Service Tools & Demonstration of the EU Added Value

Mesurements & source apportionment	Urban mapping & exposure health effects, citizens	Modeling & emission inventories
Specific Objective 1	Specific Objective 2	Specific Objective 3

Demonstration

Testing services in pilot cities

Specific Objective 4

Roadmap for Upscaling

Upscaling service tools on enhanced air quality observations & transfer to AQMNs, administrations and agencies & citizen engagement

Specific Objective 5

Station Type ● SUB ● UB ● TR ● RB

14 European Countries   32 European Cities

RI URBANS

54 monitoring site (UB/SUB/TR/RB)

AE33-AE31-AE22-AE21-MAAP

Mean eBC 2017-2019 (μg/m^3)
- 0.28-0.50
- 0.51-1.00
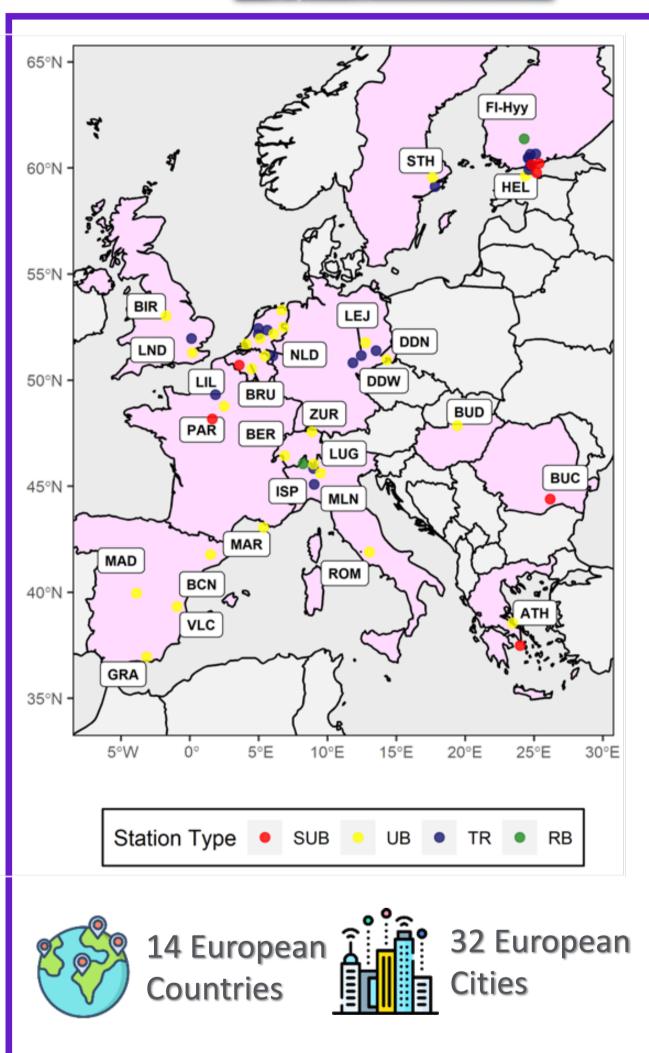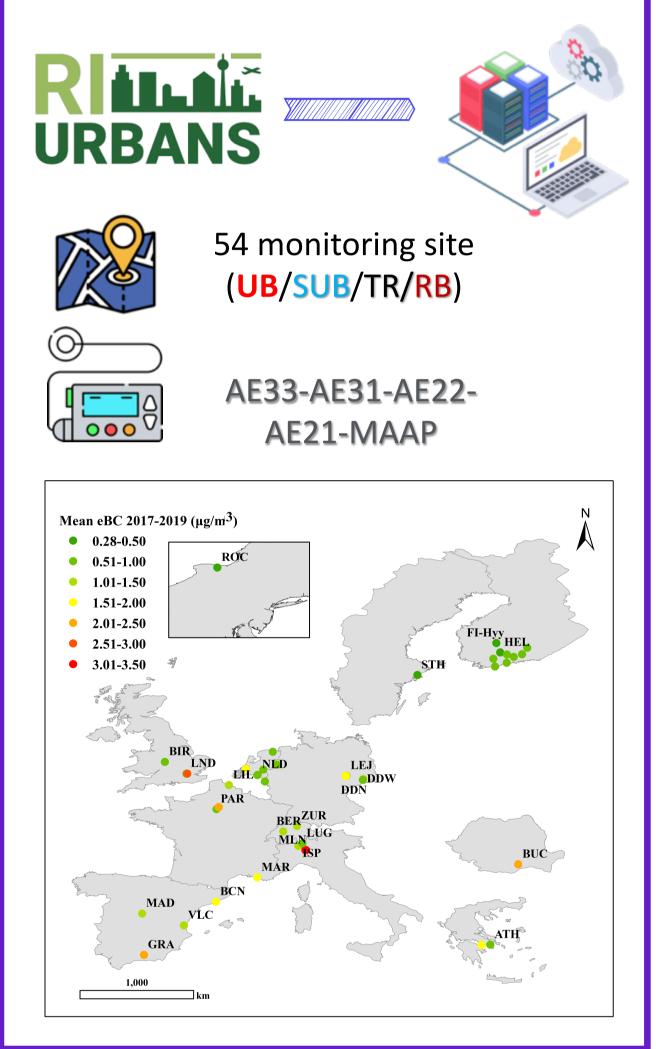- 1.01-1.50
- 1.51-2.00
- 2.01-2.50
- 2.51-3.00
- 3.01-3.50

Objectives

Analyze a new set of BC data concentrations at urban background station, using a combination of instruments for the simultaneous measurement of total carbon (TC), OC, EC, and BC

Study variability of concentrations of eBC particles and its source attribution

Evaluate the interest in using eBC as an advanced Air Quality parameter

Source apportionment of the multiannual data on the chemical composition of carbonaceous aerosols in the urban background station

Use of compiled eBC & harmonized data for epidemiological evaluations, trend analysis, model validation, improving emission inventories and AQ management

Methodology: (1) Compilation of data on carbonaceous aerosols (BC) recorded in urban air quality stations in Europe (2) Study of temporal series (3) Pre-treatment and harmonization of BC measurements (4) Performing a 'pan-European overview' on carbonaceous aerosols focused on BC (5) Contribution to the elaboration of standards for the measurement of specific variables: TC, BC (6) Continuous measurement of BC and TC at the atmospheric research stations of the EGAR group (7) Total carbon measurement (TC=OC+EC) using a TCA08 analyzer (8) Participation in Pilot 4 of the RI-URBANS project, in which the Barcelona station participates to assess the impact of the different components and sources of PM on health

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UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH

Natural Resources and Environment Doctoral Program

Organitza:

UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH — Escola de Doctorat

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Amb el Suport de:

Diputació Barcelona   SOC Servei d'Ocupació de Catalunya   Generalitat de Catalunya   Unió Europea Fons Social Europeu   SEPE

Aquesta acció està subvencionada pel Servei Públic d'Ocupació de Catalunya i l'FSE en el marc dels programes de suport al desenvolupament local.