ST13: Protocols for offline and online source apportionment using receptor modeling. Here we propose protocols with the minimum requirements for measurements and the modeling procedure to carry out the source apportionment analyses based on the receptor experimental matrices. This is available for PM speciation, BC, VOCs and UFP-PNSD, among others. These include guidance on instrumentation and modeling tools, methods and protocols to follow in each case for a harmonized implementation of both analytical and source apportionment approaches. The linked resources for this ST are listed under ST1-7 and supported by modeling tools (including emission inventories) ST17-20.

The linked resources for ST include:

1) RI-URBANS general guideline document on source apportionment based on receptor modeling: D3 (D1.3) Report on source apportionment studies and recommendations for source apportionment procedures. https://riurbans.eu/wp-content/uploads/2023/10/RI-URBANS_D3_D1_3.pdf

2) Data requirements for the NRT online source apportionment is described in D4 (D1.4) NRT source apportionment ST for submicron carbonaceous matter (pilots). https://riurbans.eu/wp-content/uploads/2023/01/RI-URBANS_D4_D1_4.pdf

Scientifically this ST13 links Amato et al. (2023) (to be published soon), which summarizes the proposed protocols with the minimum requirements for measurements and the modeling procedure to carry out the source apportionment analyses based on the receptor experimental matrices. This is available for PM speciation, BC and UFP-PNSD, among others. Chen et al. (2022a): https://doi.org/10.1016/j.envint.2022.107325, which summarizes an European aerosol phenomenology based on harmonized source apportionment of organic aerosol using 22 Year-long ACSM/AMS datasets. In 't Veld et al. (2023a): https://doi.org/10.1016/j.scitotenv.2023.166440, which combines offline AMS analysis of filters with conventional PM speciation to obtain source apportionment. Via, et al. (2023): https://doi.org/10.1016/j.envint.2023.108006, which implemented a source apportionment analysis combining online and offline datasets in a single PMF. For NRT source apportionment of fine carbonaceous aerosols, Chen et al. (2022b): https://doi.org/10.1021/acs.est.2c02509 are describing the methodology driving SoFi RT software applied to ACSM organic aerosol mass spectral datasets, implemented in at pilot sites of WP4.1.