

# Datalystica

## Source apportionment SERVICES

### CONSIDERATIONS

The following document lists all services that can be purchased by the company Datalystica Ltd including a brief description of the technical approach. The service is mainly focused on the application of the PMF algorithm on ambient AMS or ACM data. The data must be already processed and calibrated based on the instrument software and the data with its corresponding error must be accurate, reliable and ready to be used within PMF. Moreover, external data should be provided as well, to improve the overall quality of the PMF solution. Datalystica currently charges a net price of 90 USD an hour. Fill out the service request form and send it back to [support@datalystica.com](mailto:support@datalystica.com) to receive a quote from us.

# Service request form

## Source apportionment on AMS and ACSM data using the PMF algorithm

- Quantification of traffic-related OA (HOA), biomass burning OA (BBOA), cooking-related OA (COA), Coal-combustion OA (CCOA), Semi-volatile oxygenated OA (SV-OOA), Low-volatile oxygenated OA (LV-OOA) and other possible relevant local sources. The analysis involves (un)constrained PMF runs with the  $a$  value approach or pulling equations and considers mathematical (i.e. residual analysis over profiles and time) as well as environmental aspects (i.e. correlation to proxies or tracers).
- Consideration of temporal changes of the factor profiles with the rolling technique.
- Application of PMF on combined datasets (e.g. AMS and GC-MS) with the C-value approach.
- Estimation of the statistical and rotational uncertainty performing bootstrap analysis and the Monte Carlo method on rotational tools, respectively.
- Spatial source distribution using back-trajectory analysis.
- (Offline data) Combination of data from multiple chemical analyses e.g.: main ions determined by IC, PAHs by GC-MS, EC/BC, hydrocarbons, hopanes, cellulose, carbohydrates, cellulose/lignin combustion tracers by IC PAD, PM by gravimetry, etc.).
- (Offline data) Possibility of size-resolved PMF (e.g. PM<sub>1</sub> vs PM<sub>2.5</sub> vs PM<sub>10</sub>)

## Source apportionment using literature factor/tracer ratios

- For example, determination of BBOA, BBOC, or Biomass burning PM from levoglucosan or BC wood burning including an accurate error estimate.

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**Describe your data set** (location, type and length of data, type of external data available) and the **factors** to be modeled.