

COST Action CA16109 COLOSSAL Chemical On-Line cOmpoSition and Source Apportionment of fine aerosol

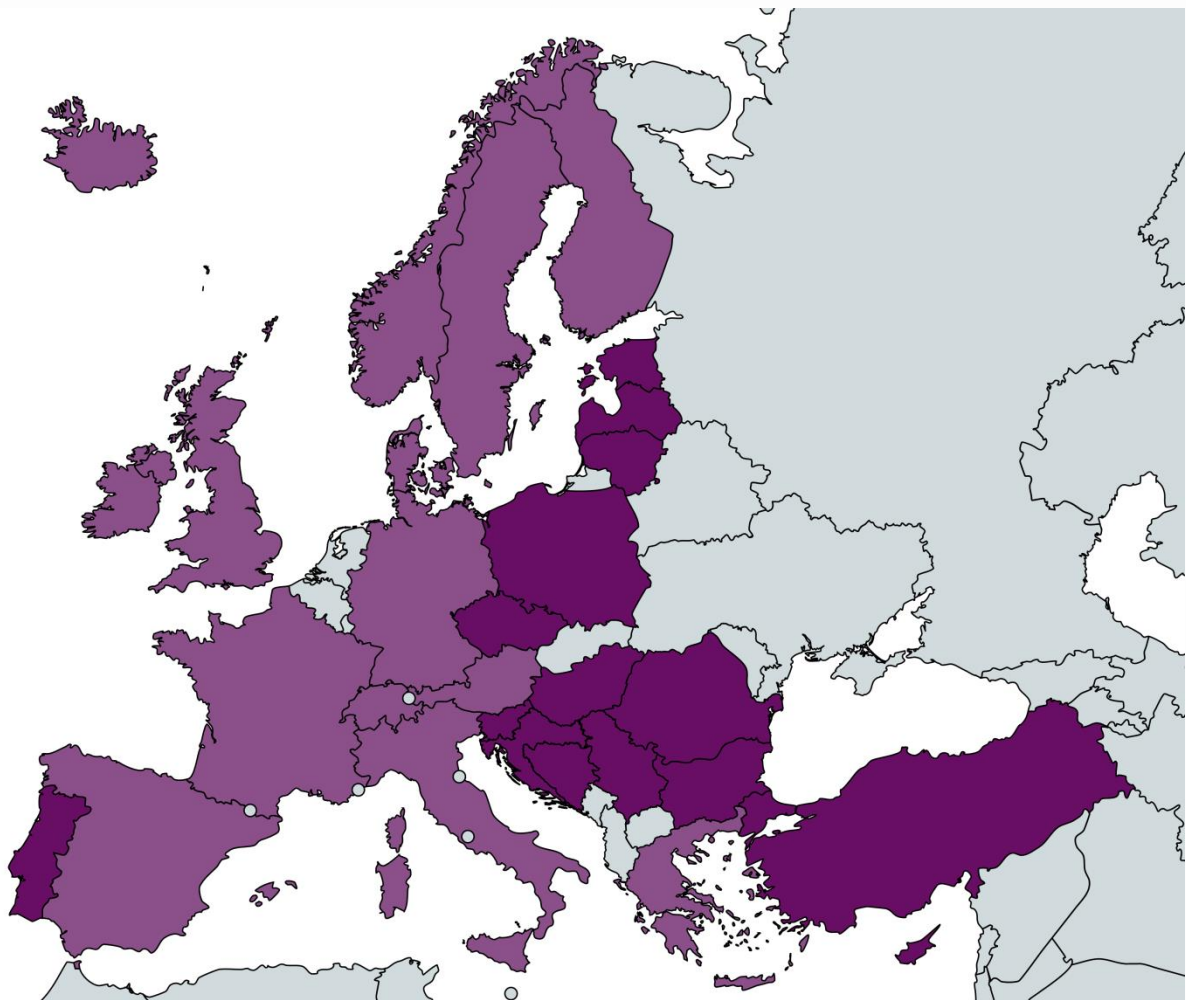


M.C. Minguillón^{1,*}, A.S.H. Prévôt², V. Riffault³, O. Favez⁴, S. Gilardoni⁵, G. Mocnik⁶, S. Platt⁷, D. Green⁸, J. Ovadnevaite⁹, A. Kasper-Giebl¹⁰, A. Alastuey¹, L. Marmureanu¹¹, A. Eriksson¹², D. Sokolovic¹³ and COLOSSAL team

¹Institute of Environmental Assessment and Water Research (IDAEA), CSIC, Barcelona, Spain
⁴Institut National de l'Environnement Industriel et des Risques, Verneuil-en-Halatte, France
⁷Norwegian Institute for Air Research (NILU), Kjeller, Norway
¹⁰Institute of Chemical Technologies and Analytics, Vienna University of Technology, Vienna, Austria
¹³Faculty of Technical Sciences, University of Novi Sad, Novi Sad, Serbia

²Paul Scherrer Institute, Villigen, Switzerland
⁵Institute for Atmospheric Science and Climate, National Research Council, Bologna, Italy
⁸King's College London, London, United Kingdom
¹¹National Institute of Research and Development for Optoelectronics, Magurele, Romania

³Institut Mines-Telecom-Ecole Nationale Supérieure des Mines de Douai, Douai, France
⁶Jozef Stefan Institute, Ljubljana, Slovenia
⁹National University of Ireland Galway, Galway, Ireland
¹²Lund University, Lund, Sweden



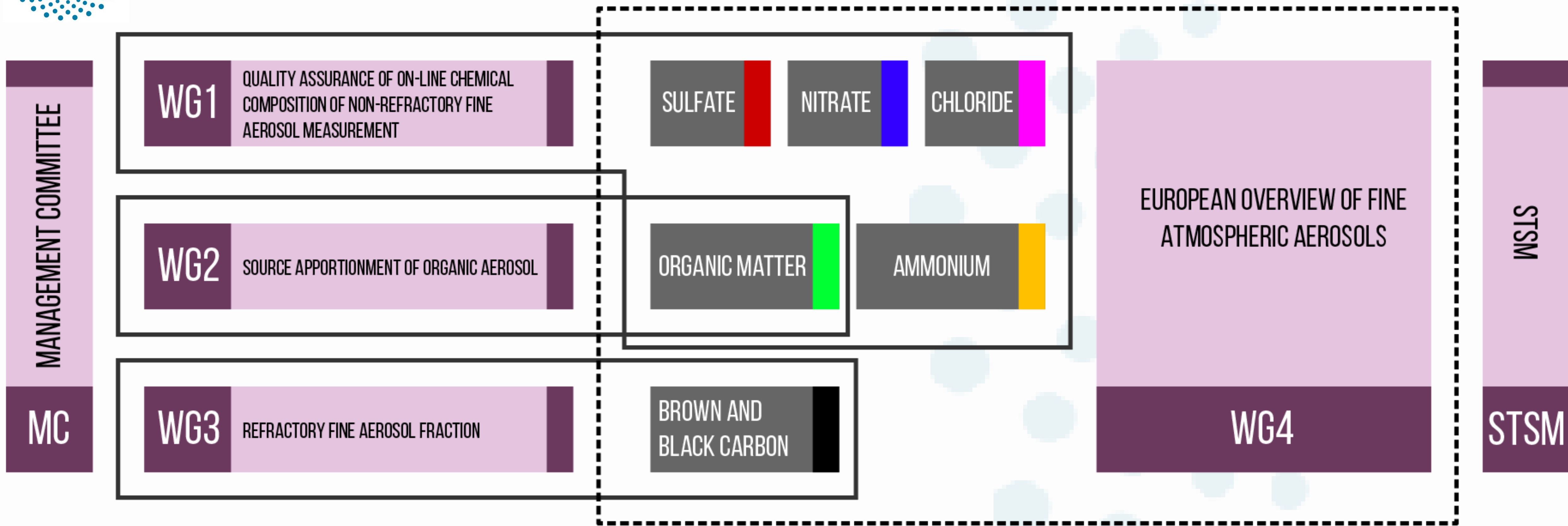
More info at <https://www.costcolossal.eu/> or email *mariacruz.minguillon@idaea.csic.es

1 Background

On COST: COST is the longest-running European **framework** supporting **trans-national cooperation** among researchers, engineers and scholars across Europe. COST funds pan-European, bottom-up interdisciplinary **research networks** in a wide range of scientific topics in Europe and beyond, called **COST Actions**.

On fine aerosol: Atmospheric aerosols exert a negative impact on human health and affect the climate and the environment. These effects are dependent on the type, size and chemical composition of atmospheric aerosols, emitted by different emission sources and generated and influenced by different atmospheric processes.

3 Structure of the COST Action COLOSSAL



COST Action COLOSSAL started in March 2017 and is organized in **four inter-related Working Groups (WG)** focusing on the **main components of fine atmospheric aerosols**. Thus, WG1 deals with sulfate, nitrate, chloride, organic matter and ammonium, for which it mainly relies on Aerosol Mass Spectrometer technology. WG2 deals with source apportionment of organic aerosol. WG3 studies the refractory black and brown carbon, relying mainly on Aethalometers. WG4 aims to bring together all efforts for a joint interpretation of results.

Thirty countries have joined their efforts within this Action by April 2018, 29 of them in Europe (15 Inclusiveness Target Countries in darker purple in map).



Ljubljana, 15-17 Jan 2018, Training School

2 Challenge and objectives

The main **challenge** of COST Action COLOSSAL is to consistently assess the spatial variability (across Europe) of fine atmospheric aerosols, their temporal variability (time scale from hours to years), chemical composition, and sources, especially trying to understand the underlying processes.

The main **objectives** are:

- to contribute to the production of guidelines for real-time **chemical characterization** and **source apportionment of fine atmospheric aerosols** to ensure consistent, reproducible and comparable results;
- to coordinate **exchanges of scientific research** among experts, researchers, and manufacturers;
- to promote the **joint interpretation** of results, while connecting to existing scientific and monitoring infrastructure on the European and national scale;
- to provide input for **air quality models** and **policy makers**;
- to contribute to **capacity building** across Europe.



Brussels, 3 Mar 2017, MC meeting

4 Past and foreseen activities



Prague, 15-17 Feb 2018, Training School



Barcelona, 26-28 Sep 2017, MC and WGs meeting

Two **Management Committee (MC) meetings** took place. A **scientific meeting**, in which all four WGs were included, was celebrated in September 2017, generating already some documents serving as basis for future directions. Three **training schools** have taken place already, related to WG1, WG2 and WG3.

For the upcoming period, a **workshop** on source apportionment of organic aerosol is foreseen, as well as a meeting on air quality data across Europe. Instrument **intercomparison exercises** are planned related to WG1 and WG3, in coordination with existing European efforts. More training schools will take place to ensure the transfer of knowledge and **capacity building**.

