



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

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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. The main challenge of COST Action CA16109 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. To this end, 28 countries have joined their efforts within this Action by January 2018. Many research groups and some air quality monitoring networks in Europe and across the world have acquired recently-developed high time resolution chemical composition measurement instrumentation. These include the Aerosol Chemical Speciation Monitor (based on Aerosol Mass Spectrometer technology), which measures non-refractory ammonium, nitrate, sulfate, chloride, and organic mass, and instruments that measure the refractory black and brown carbon, such as the Aethalometer and Multi Angle Absorption Photometer. The processing and interpretation of the generated data will be achieved by a network built through the present Action to jointly develop the capacity for the interpretation of the measurements gathered using these techniques. Connections to existing scientific and monitoring infrastructure on the European and national scale will be fully exploited. The outcomes of the Action will be relevant for air quality modellers and policy makers.