



An overview of the Chemistry-Aerosol Mediterranean Experiment (ChArMEx)

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The Chemistry-Aerosol Mediterranean Experiment (ChArMEx, <http://charmex.lsce.ipsl.fr>) is a French initiative of the MISTRALS meta-programme (Mediterranean Integrated Studies at Regional And Locals Scales, <http://www.mistrals-home.org>). It federates a great number of national and international cooperative research actions aiming at a scientific assessment of the present and future state of the atmospheric environment in the Mediterranean Basin, and of its impacts on the regional climate, air quality, and marine biogeochemistry. The target is short-lived particulate and gaseous tropospheric trace species which are the cause of poor air quality events, have two-way interactions with climate, or impact the marine biogeochemistry, in a context of strong regional anthropogenic and climatic pressures. The six ChArMEx work packages include Emissions, Chemical processes and ageing, Transport processes and air quality, Aerosol-radiation-climate interactions, Deposition, and Present and future variability and trends.

For several years, efforts have been deployed in several countries to develop (i) a network of relevant stations for atmospheric chemistry at background sites on islands and continental coasts around the basin and (ii) several intensive field campaigns including the operation of surface supersites and various instrumented mobile platforms (large and ultra-light aircraft, sounding and drifting balloons, ZeroCO₂ sailboat). This presentation is an attempt to provide an overview of the various experimental, remote sensing and modelling efforts produced and to highlight major findings, by referencing more detailed ChArMEx presentations given in this conference and recently published or submitted papers.

During the first phase of the project experimental efforts have been mainly concentrated on the western basin. Plans for the 2nd phase of ChArMEx, more dedicated towards the eastern basin, will also be given. In particular we plan to develop monitoring activities at Cyprus and put more emphasis (i) on aerosol-cloud interactions in cooperation with the FP7/Environment project BACCHUS, (ii) the budget and transport of anthropogenic emissions from megacities, and (iii) processes at the air-sea interface with a proposal for a 1-month oceanographic cruise during a period of dust deposition events, joint with the biogeochemistry component of MISTRALS (project MERMEX: the Marine Ecosystem Response Mediterranean Experiment).

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