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A brief overview of the Chemistry-Aerosol Mediterranean Experiment (ChArMEx) database and campaign operation centre (ChOC)

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Initiated in 2010 in the framework of the multidisciplinary research programme MISTRALS (Mediterranean Integrated Studies at Regional and Local Scales; http:www.mistrals-home.org), the Chemistry-Aerosol Mediterranean Experiment (ChArMEx, http://charmex.lsce.ipsl.fr/) aims at federating the scientific community for an updated 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 project combines mid- and long-term monitoring, intensive field campaigns, use of satellite data, and modelling studies.

In this presentation we provide an overview of the campaign operation centre (http://choc.sedoo.fr/) and project database (http://mistrals.sedoo.fr/ChArMEx), at the end of the first experimental phase of the project that included a series of large campaigns based on airborne means (including balloons and various aircraft) and a network of surface stations. Those campaigns were performed mainly in the western Mediterranean basin in the summer of 2012, 2013 and 2014 with the help of the ChArMEx Operation Centre (ChOC), an open web site that has the objective to gather and display daily quick-looks from model forecasts and near-real time in situ and remote sensing observations of physical and chemical weather conditions relevant for the everyday campaign operation decisions. The ChOC is also useful for post campaign analyses and can be completed with a number of quick-looks of campaign results obtained later in order to offer an easy access to, and comprehensive view of all available data during the campaign period. The items included are selected according to the objectives and location of the given campaigns. The second experimental phase of ChArMEx from 2015 on is more focused on the eastern basin. In addition, the project operation centre is planned to be adapted for a joint MERMEX-ChArMEx oceanographic cruise (PEACETIME) for a study at the air-sea interface focused on the biogeochemical impact of atmospheric deposition.

The database includes a wide diversity of data and parameters relevant to atmospheric chemistry. The objective of the database task team is to organize data management, distribution system and services, such as facilitating the exchange of information and stimulating the collaboration between researchers within the ChArMEx community, and beyond. The database relies on a strong collaboration between ICARE, IPSL and OMP data centers and has been set up in the framework of the MISTRALS programme data portal. ChArMEx data, either produced or used by the project, are documented and made easily accessible through the database website, which offers expected user-friendly functionalities: data catalog, user registration procedure, search tool to select and access data based on parameters, instruments, countries, platform or project, information of dataset PIs about downloadings... The metadata (data description) are standardized, and comply with international standards (ISO 19115-19139; INSPIRE European Directive; Global Change Master Directory Thesaurus). A Digital Object Identifier (DOI) assignement procedure allows to automatically register the datasets, in order to make them easier to access, cite, reuse and verify.

At present, the ChArMEx database contains about 160 datasets, including more than 120 in situ datasets (from a total of 7 campaigns and various monitoring stations including the background atmospheric station of Ersa (June 2012-July 2014), 30 model output sets (dust model intercomparison, MEDCORDEX scenarios...), a high resolution emission inventory over the Mediterranean made available as part of the ECCAD database (http://eccad.sedoo.fr/eccad_extract_interface/JSF/page_charmex.jsf), etc. Some in situ datasets have been inserted in a relational database in order to enable more accurate selection and download of different datasets in

a shared format. Many dedicated satellite products (SEVIRI, TRIMM, PARASOL...) are processed and will soon be accessible through the database website.

Every scientist is welcome to visit the ChArMEx websites, to register and request data, and to contact charmex-database@sedoo.fr for any question.