



## **An overview of Modelling Activities during the TRAQA Pre-CHARMEX Campaign**

Laaziz El Amraoui (1), Jean-Luc Attié (1,2), Elodie Jaumouillé (1), François Ravetta (3), Gérard Ancellet (3), Pierre Durand (2), François Dulac (4), Philippe Ricaud (1), Bojan Sic (1), Emeric Hache (1), and Nicolas Verdier (5)

(1) CNRM-GAME, Météo-France and CNRS, UMR 3589, Toulouse, France (laaziz.elamraoui@meteo.fr, +33-5-61-07-97-67), (2) Laboratoire d'Aérodynamique, Université de Toulouse CNRS/INSU, Toulouse, France, (3) LATMOS/IPSL, Université Pierre et Marie Curie, Paris, France., (4) LSCE, UMR 8212 CEA-CNRS-UVSQ CEA Saclay 701, Gif-sur-Yvette, France, (5) CNES, Toulouse, France

The TRAQA (TRAnsport à longue distance et Qualité de l'Air dans le bassin méditerranéen) campaign took place on the Mediterranean basin from 26 June to 11 July 2012 with 7 Intensive Observation Periods (IOPs). The goal of this field campaign is focused on: i) the characterization of the dynamical processes which govern the export of polluted air masses from the remote regions of the basin; ii) the quantification of the exchange between the boundary layer and the free troposphere; iii) Lagrangian studies of ageing and mixing processes of polluted plumes in the lower troposphere, and finally to test the representativity of the case studies over a long period.

During this experiment, The ATR-42 aircraft of Météo-France and atmospheric balloons (sounding and drifting) operated by CNES have been used to measure trace gases and aerosols. Five drifting balloons were launched (three of them have measured ozone). In total, seven intensive observations periods were made with a total of 60 hours of flight and as many as for balloons during a moderate Mistral cases.

During the field campaign, many models have been used to define the optimal conditions in relation with the operation of aircraft and balloon measurements. The MOCAGE model forced by ARPEGE analyses and the MACC outputs have been used during the campaign in addition to the trajectory model (BAMED) based on AROME and ECMWF to forecast the favourable conditions to launch the balloons.

In this contribution we will give an overview of the modelling results during this field campaign in comparison to different observations. This comparison will concern the atmospheric species (ozone and carbon monoxide) as well as aerosols for different IOPs. These later concern a pollution event over the Gulf of Genoa, an event of desert dust transport from Africa, a pollution export from the region of Barcelona and an event of moderate Mistral.