Geophysical Research Abstracts
Vol. 20, EGU2018-18609-1, 2018
EGU General Assembly 2018

Overview of atmospheric composition in Western Mediterranean during PEACETIME cruise

Karine Desboeufs (1), Jean-François Doussin (1), Chiara Giorio (2,3), Sylvain Triquet (1), Yinghe Fu (1), Véronique Riffault (4), François Dulac (5), Anaïs Féron (1), Paola Formenti (1), Franck Maisonneuve (1), Guillaume Siour (1), Pascal Zapf (1), and Cécile Guieu (6)

(1) LISA UMR7583, CNRS, Université Paris-Est-Créteil (UPEC) and Université Paris Diderot (UPD), Institut Pierre Simon Laplace (IPSL), Créteil, France (desboeufs@lisa.u-pec.fr), (2) LCE, UMR7376, CNRS, Aix-Marseille University, France, (3) Dipartimento di Scienze Chimiche, Università degli Studi di Padova, Padova, Italy, (4) Département Sciences de l'Atmosphère et Génie de l'Environnement, IMT Lille Douai, Douai, France, (5) LSCE, UMR 8212 CEA-CNRS-UVSQ, IPSL, Université Paris-Saclay, Gif-sur-Yvette, 91190, France, (6) LOV, Observatoire Océanologique, Sorbonne Universités, UPMC Univ. Paris 06, CNRS UMR 7093, Villefranche-sur-Mer, France

The PEACETIME project (ProcEss studies at the Air-sEa Interface after dust deposition in the MEditerranean sea) investigates the fundamental physical, chemical and biological processes and their interactions at this key interface in the Mediterranean Sea in order to assess how these processes impact, and will impact, the functioning of the pelagic ecosystem and the feedback to the atmosphere, today and in the future. Indeed, the Mediterranean Sea which is considered as a hot spot for biodiversity but also for climate change and anthropogenic pressure is an ideal natural laboratory to study these processes.

The PEACETIME project is based on a cruise conducted in May/June 2017 over Western Mediterranean on the R/V Pourquoi Pas?. An instrumented mobile station was deployed on the R/V in order to monitor the atmospheric composition of the boundary layer at the ocean-atmosphere interface using a suite of in situ aerosol and gas probes and samplers as well as observations of meteorological, atmospheric dynamics and radiative parameters (incident radiation, atmospheric optical thickness). Measurements allowed us to document the composition of the lower troposphere in contrasted areas from the remote Ionian Sea to Balearics Islands through the Tyrrhenian Sea and Messina Strait with its high maritime ship traffic. Particulate and gas concentrations will be presented and discussed with synoptic information from the back-trajectories of air masses and operational satellite-derived and 3-D model products. Local vs. remote emission sources, in particular marine sources, and photochemical processes will be addressed.