



Characterization of aerosol seasonality over Western Mediterranean sea with POLDER-3/PARASOL retrievals

Lydie Mbemba Kabuiku (1,4), Isabelle Chiapello (2), Fabrice Ducos (2), Didier Tanré (2), François Dulac (3), and Paola Formenti (1)

(1) Laboratoire Interuniversitaire des Systèmes Atmosphériques, UMR CNRS 7583, Universités Paris-Est Créteil et Paris Diderot, Institut Pierre-Simon Laplace, Créteil, France, (2) Univ. Lille, CNRS, UMR 8518 – LOA - Laboratoire d'Optique Atmosphérique, UMR CNRS 8518, Université Lille 1, Villeneuve d'Ascq, F-59000 Lille, France, (3) Laboratoire des Sciences du Climat et de l'Environnement, UMR CNRS 8212, Institut Pierre-Simon Laplace, Gif-sur-Yvette, France, (4) Agence de l'Environnement et de la Maîtrise de l'Energie, 20, avenue du Grésillé - BP 90406, 49004 Angers Cedex 01, France

Because of its sensitivity to climate change, and increasing anthropic pressure affecting the air quality, the Mediterranean basin is one of the regional hot-spots highlighted in the latest IPCC report. In particular, the region is characterized by aerosols from natural and anthropogenic sources, in elevated and variable concentrations, who are at present not very well accounted by climate, weather, and dispersion models.

To provide with new data on their spatial distributions and time tendencies, in this work we present an analysis of observations by POLDER-3/PARASOL spaceborne instrument from 2005 to 2013.

POLDER-3 provides with aerosol columnar extinction of aerosol fine/spherical coarse/non-spherical coarse modes over ocean. These abilities allow us to present here the results of seasonal and spatial trends of the size- and shape-segregated aerosol optical depth over the western Mediterranean basin, and their validation with AERONET observations, as well as with the in situ measurements conducted during the intensive observation periods of the ChArMEx project (summer 2012-2013).