

International Master 2 Atmospheric Environment: Research Training 2017-2018

Laboratory: LOA

Supervisor: Yevgeny DERIMIAN,

Tél : 03.20.33.60.05, E-mail : FirstName olivier.pujol@univ-lille1.fr,
yevgeny.derimian@univ-lille1.fr

Collaborator: Olivier PUJOL

CaPPA Work Package: WP-3

Contribution of water vapor to the greenhouse effect from measurements during the SHADOW campaign

During the SHADOW (Study of Saharan Dust Over West Africa) campaign, conducted in March-April 2015 and December 2015-January 2016 in M'Bour (Senegal coast), a comprehensive dataset about aerosols (dust essentially) and gases (e. g. water vapor) has been collected.

Water vapor is a very important trace gas in the atmosphere since it controls cloud formation and it has the most important greenhouse effect: its contribution represents around 60 % in clear air condition. In this Master 2 internship, the student will have to analyze different data from the SHADOW campaign: water vapor data and AOD (aerosol optical depth) from the LILAS (lidar) instrument, and radiative measurements from fluxmeters. The question to answer is the radiative impacts due to water vapor and dust respectively. A model of radiative transfer (ARTDECO) will also be used to distinguish and to quantify the two different contributions.

Key words: Water vapor, dust, Shadow campaign, greenhouse effect, lidar measurements