

## International Master 2 Atmospheric Environment: Research Training 2018-2019

Laboratory: LOA

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Collaborator:

CaPPA Work Package: WP-2 Aerosol optical properties and WP-3 Aerosol satellite observations

### **Impact of the aerosol optical properties obtained in laboratory on their characterization by remote-sensing from space.**

Many atmospheric remote-sensing instruments allow detecting and measuring trace gas species from infrared Fourier Transform Spectrometer (FTS) embedded in balloon, aircraft and satellite platforms. Moreover, these high spectral resolution infrared observations also contain signatures due to atmospheric aerosols. Although it is possible to use these IR spectra to identify the chemical composition and the size distribution of the aerosol particles, the use of these measurements are up to now very sparse. This is explained by the lack of optical properties obtained in the laboratory.

This is why PC2A and LOA have developed an original methodology to derive aerosol optical properties on a wide spectral range from infrared to UV-vis. and to establish the link with their chemical composition.

The goal of this training is to use these new aerosol optical properties obtained in laboratory in order to quantify the gain for their characterization from the retrieval of the high spectral resolution infrared measurements of the spatial instrument IASI.

**Key words:** Remote-sensing ; optical properties ; infrared ; aerosol