Master 2: Research Training 2023-2024

Laboratory: PhLAM

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Eventually CaPPA Work Package: WP-1 From gas phase to aerosols

Caractérisation de la chambre de simulation de glaces par une étude d'interaction glace-COV

Studies of volatile organic compound (VOC) interactions with ice are rare, yet ice surfaces are omnipresent on the Earth and in the terrestrial atmosphere in the form of ice cirrus clouds, glacialclouds, and polar stratospheric clouds. Ice surfaces can regulate the chemical composition of the atmosphere and strongly influence Earth's biochemical and geochemical cycles. For example, the ice phase may represent a source of substantial removal of VOCs through ad- and absorption. The aim of this project is to characterize the ice simulation chamber recently set up at the PhLAM Laboratory in conjunction with a high-resolution terahertz spectrometer. In this context, the main objective is to measure the sensitivity of the spectrometer under different conditions of pressure, temperature and UV flux. The second project objective is to carry out an absorption and desorption study of a biogenic VOC (monoterpene) on the ice surface. This is a qualitative study with a focus on the identification of VOC reaction products in the ice under the influence of UV radiation.