PhD GRANTS 2024

PhD project title: In-situ characterization of amino acids and their precursors using the LITE device (Lille Ice Terahertz Experiment)

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PhD project summary (max. 20 lines):

Amino acids are the fundamental building blocks of proteins, macromolecules essential to life. The study of complex organic molecules (COMs) including amino acids in the interstellar medium (ISM) is crucial to understanding the origins of life on Earth. Since the commonly adopted models that best explain the formation and abundance of MOCs observed in MIS are based on rich grain surface chemistry, laboratory simulations of interstellar ice analogs are essential to understanding the formation of these compounds. Rotational spectroscopy is a powerful technique for analyzing gas- phase compounds with absolute specificity, which is essential for better understanding chemical processes in interstellar ices. The main goal of this project is to study the formation, reactivity and desorption of amino acid precursors to provide more information on their links with the final reaction products in interstellar ices. These studies will be carried out using the new LITE (Lille Ice Terahertz Experiment) simulation chamber coupled with the high-resolution terahertz spectrometer.