

**PhD GRANTS 2024**

**PhD project title:** Molecular physical chemistry applied to the study of atmospheric compounds and their interactions through spectroscopic and spectrometric characterization

**PhD Supervisor:** M. Goubet/ C. Pirim

---

**PhD project summary (max. 20 lines):**

The PMI team is offering a thesis in experimental molecular physical chemistry applied to the study of atmospheric compounds playing an essential role in regulating the chemical composition of the atmosphere, and the Earth's biochemical and geochemical cycles. The thesis project is in line with the research themes developed within the PMI team on 1) the study of the hygroscopic character of aerosols and VOC-water-aerosol interactions, 2) the characterization of the micro-solvation of atmospheric precursors on a molecular scale. Thesis work will be carried out using spectroscopic, spectrometric and optical tools available in the team, coupled with dedicated devices for simulating the gaseous and particulate phase of the troposphere and upper troposphere. Precursor and aerosol formation mechanisms in interaction with water molecules, chemical composition and reaction product ratios will be analyzed and characterized using these techniques. In addition, analytical tools will be developed or improved to translate the data into physico-chemical properties.