

## UV-induced desorption of interstellar ices analogs

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In the colder parts of the interstellar medium, dust grains are covered with molecular ices composed of water, carbon monoxide, carbon dioxide, but also of more complex molecules such as methanol. They act as the main molecular reservoir of these regions and are therefore of high interest in astrochemistry<sup>1</sup>.

These ices evolve as they receive energy from their environment, for example when they are irradiated by UV photons. These interactions will eventually modify the ice composition, or release molecules/radicals into the gas phase. The electronic excitation of condensed molecules can thus lead to the desorption of surface molecules into the gas phase. The mechanisms at play during the photo-induced desorption are poorly characterized. Recent results from laboratory experiments on interstellar ice analogs exposed to UV photons from laser sources or from the Soleil synchrotron will be presented, with an effort to unveil the desorption mechanisms<sup>2,3,4</sup>.

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<sup>3</sup> Basalgète, R.; Ocaña, A. J.; Féraud, G.; Romanzin, C.; Philippe, L.; Michaut, X.; Fillion, J.-H.; Bertin, M. Photodesorption of Acetonitrile CH<sub>3</sub>CN in UV-Irradiated Regions of the Interstellar Medium: Experimental Evidence. *The Astrophysical Journal* 2021, 922 (2), 213.

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