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# Experimental investigation of X-ray irradiation of interstellar ice analogs with synchrotron radiation

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## Abstract

Astrophysics observations of protoplanetary disks show the presence of Complex Organic Molecules (COMs) into the gas phase. These COMs are linked with the presence of ice mantles coating interstellar grains. These ices are submitted to irradiation by soft X-rays in the disk and also from the surrounding stars in the Young Stellar Object Cluster. However, their role in the gas to ice balance, via induced desorption processes, was not well-constrained. I will present an experimental laboratory investigation of irradiations of ices on the soft X-ray range, which benefit from the tunability of the synchrotron radiation facility. These experiments are focused on non-thermal desorption induced by soft X-rays photons. The result reveal X-ray photodesorption yields at least comparable to that usually found in the UV range. Examples from the desorption of ices containing H<sub>2</sub>O, CO and CH<sub>3</sub>OH will be given.

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