

**Jeudi 16 mai 2024 à 11h (IAS, bâtiment 121, salle 1-2-3)**

**The role of ultraviolet radiation: illuminating interstellar clouds and proto-planetary systems**

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Most stars (and thus planets) are born in clusters that contain massive stars. These stars are prodigious sources of UV radiation and strong stellar winds. Far-ultraviolet photons ( $E < 13.6$  eV) from massive stars, in particular, regulate the heating, ionization, and chemistry of much of the molecular interstellar medium (ISM). These environments are broadly known as photodissociation regions (PDRs).

The interaction between far-UV photons and interstellar matter in PDRs triggers a plethora of gas/PAH/grain microphysical processes. PDR emission tracers are the smoking gun of the feedback from massive stars. These feedback processes take place at very different spatial scales: from astronomical units in protoplanetary disks to kilo parsec scales in distant starburst galaxies.

In this talk I will review our observational results (using SOFIA, ALMA, and JWST) on the impact of far-UV radiation and stellar winds emitted by massive stars in the Trapezium cluster: from shaping the large-scale morphology of the iconic Orion nebula to irradiating planet-forming systems in Orion star-forming region.