

Protoplanetary disks around very low mass stars: An interesting case study for ELT/METIS

Very low-mass stars are known to host terrestrial planets more frequently than other types of stars, but the composition of these planets is still unknown. Their composition will be influenced by the composition of the protoplanetary disk in which they formed. Recent JWST/MIRI observations have shown that protoplanetary disks around very low-mass stars host large amounts of hydrocarbons, unlike disks around more massive stars. Here I will present the JWST/NIRSpec observations of two of these disks, giving us access to the CO emission branches. While CO is likely to be detected in one of the two disks, the detection of the other carbon-bearing molecules is complicated by the strong contribution of the stellar atmosphere at short wavelengths, requiring a robust modeling approach. These NIRSpec observations, in synergy with future ELT/METIS observations unveiling the global structure of these disks, are crucial to understand the peculiarities of planet formation around very low mass stars.