## Shaping the CO snowline in protoplanetary disks

Characterizing the dust thermal structure in protoplanetary disks is a fundamental task as the dust temperature can affect both the disk chemical evolution and planet formation. It is a challenging task, however, since the temperature is strongly dependent on many parameters, including the grain size distribution.

We investigate the effects of the radiative interactions between multiple dust populations on the CO distribution using dedicated thermochemical disk models. We find that the interaction of the dust scattered light between at least two dust grain populations can produce a complex temperature structure. In particular, the scattered light is sufficient to significantly raise the temperature of micron-sized grains in the midplane. This results in the splitting of the CO snowline that can strongly reshuffle the distribution of both CO in the gas-phase and on the grain surface.