

# Dust evolution in protoplanetary disks

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The first steps of planet formation are believed to be the growth of initially small, micrometric dust grains and their decoupling from the gas phase via vertical settling and radial migration. With the advent of ALMA and extreme adaptive optics system, such as MagAO, SPHERE or GPI, it is now possible to probe the dust in disks at resolutions of about 0.05 arcsec from the optical to the millimeter regimes. Recent observations have revealed a incredible diversity of structures in the dust phase of disks, with gradients of dust properties, gaps, spirals, dust traps, ...

In this talk, I will present a few of these recent results and illustrate how these observations can be coupled to detail models in order to put quantitative constraints on the evolution of dust grains and on the mechanisms of planet formation.