

Subject : Planet formation

Title : How do planets form? - witnessing the ongoing planet formation -

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Outline :

Planet formation is a process of size growth of solid bodies. Solids are first formed at around supernova explosion and/or AGB stars with a size of submicron. These tiny dust grains arrive at protoplanetary disks, which is a disk around a young star and is believed to be the birthplace of planets, and they coagulate to form larger and larger bodies, ultimately yield thousand-kilometer-sized planetary mass objects. However, this process has several obstacles before forming planets. In this lecture, I will briefly overview the whole process of the planet formation and discuss how we can constrain this process with astronomical observations, especially with ALMA.

Learning objectives :

Overall picture of size growth process of solid bodies in planet formation.

What can be observed in protoplanetary disks.

Latest observational results of protoplanetary disks with ALMA

Textbooks and references :

Astrophysics of Planet Formation, Philip J. Armitage, 2020, Cambridge University Press