

Gas distribution in protoplanetary disks

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The disks around pre-main sequence stars are the reservoirs of raw material that represent the initial conditions for the formation of planetary systems. Understanding the chemical composition and evolution of disks thus provide constraints on the nature of molecules incorporated into planetesimals and planets. Here we present how we use the Submillimeter Array (SMA) and Atacama Large Millimeter/submillimeter Array (ALMA) observations to constrain the radial and vertical distributions of gas molecular tracers, and explore their implications for chemical processes in protoplanetary disks and our own Solar Nebula.