

# Gas in Debris Disks

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The circumstellar disks observed around several hundred main-sequence stars are mostly revealed by excess infrared emission around the stars, which are called debris disks. The evolution of protoplanetary disks, say growth or formation of planets, may form debris disks. Gas depletion of protoplanetary disks affects planet formation such as gas giant formation, planetary migration, and so on. CO gas is observed in some debris disks, but the population of hydrogen molecule, the major gas component in protoplanetary disks, is still unclear. Higuchi et al. (2017) first measured the amount of neutral carbon gas [C I] in the debris disks around 49 Ceti and beta Pic using ASTE. We calculate the ratio of [C I]/ [CO] as a function of the amount of H<sub>2</sub>, using the Meudon PDR (Photon Dominated Region) code. High ratio of [C I]/[CO] indicates the depletion of H<sub>2</sub>.