

Title: Planet Forming Disks

Abstract:

The circumstellar disks that arise naturally from the star formation process are the sites where planets are born. Observations at millimeter wavelengths play a key role in probing these disks by providing direct access to the cool dust and gas that trace the bulk of the disk mass, with no contrast problem from starlight. I will discuss recent observations of disks from the Submillimeter Array on Mauna Kea, Hawaii, designed to provide insight into disk physical conditions and planet forming potential. In particular, I will describe a high resolution ($0.3 \text{ arcsec} = 40 \text{ AU}$) 870 micron survey of dust continuum emission from young disks associated with the Ophiuchus cloud, where we have used 2D radiative transfer calculations to fit simultaneously the resolved submillimeter data and the broadband spectral energy distributions with a parametric model to characterize disk structure and the likelihood of future (and perhaps even past) planet formation. Also, I will touch on the incredible advances in this field expected with next generation facilities, in particular the Atacama Large Millimeter Array, now under construction in Chile.