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Anna Miotello - The Disk Exoplanet C/Onnection (Invited)

Tuesday, 13 June 2023 09:00 (25 minutes)

Protoplanetary disks set the initial composition of future planetary systems. Comparing the chemistry of disks to the compositions of exoplanet atmospheres - a major priority for current space missions - informs our understanding of the planet-formation process. ALMA's unmatched capabilities have enabled huge advances in our view of disk chemistry, but our most studied systems are not representative of the exoplanet population. C2H, N2H+, and CO, have proven to be key for deriving gas-phase C/O and metallicity (C/H, O/H) via comparison with state-of-the-art astrochemical models. The ongoing DECO ALMA Large Program will observe 80 disks across four star forming regions, sampling a range of stellar masses, disk sizes, and environments to examine the disk gas compositions to search for commonalities/differences between regions and across the entire sample. This survey will revolutionize our understanding of the chemical diversity occurring in more "typical" disks and how it imprints on the diversity of exoplanet populations.

Session Classification: Planet-forming disks