

What ALMA will do for jet observations

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Abstract

Observations using the Atacama Large Millimeter Array (ALMA) and the Jansky Very Large Array (JVLA) will address gaps in our understanding of astrophysical disks, jets and outflows from young stellar objects, evolved stars and black holes. ALMA JVLA will achieve high resolution to map small-scale structure in jets and accretion disks allowing us to explore how material is lifted off the disk and collimated into ionized jets. For example, the ability to observe hydrogen recombination lines from centimeter to millimeter wavelengths will provide a clear understanding of the kinematic and dynamical properties of jets and ionized outflows that are critical to understanding magnetic field collimation. ALMA will also recover even the most extended emission in large-scale out-flowing molecular material, allowing a detailed study of hydrodynamic mixing and dust formation. In this talk, I will highlight those features of ALMA JVLA that will contribute to our understanding of astrophysical jets and disks and discuss some of the limitations of the observations that will make interpretation challenging.