

Poster: Gas Infall and High-Mass Star Formation in Filamentary Clouds

- Xing Lu

Filamentary structures are ubiquitous in high-mass star-forming molecular clouds. Their relation with high-mass star formation is still to be understood. We introduce our observational campaign, using interferometers (ALMA, SMA, VLA) and single dishes (IRAM 30m, JCMT), toward a sample of eight filamentary clouds in a series of different evolutionary phases. Protostellar/prestellar dense cores are resolved in each cloud, and gas kinematics in filaments are traced by an ensemble of lines from these observations. We focus on two main results: (i) accretion flows in the filaments and their relation with star forming dense cores; (ii) correlations between gas properties and evolutionary stages, both of which suggest a strong relation between filaments and high-mass star formation. Depending on the status of the observations, we may also introduce the latest ALMA data that aim to resolve accretion immediately around dense cores and detect low-mass star forming dense cores.

Filaments