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CHIMPS2: Turbulence modes in the Inner Galaxy

CHIMPS2 is the follow-up to the 13CO/C18O ($3 \rightarrow 2$) Heterodyne Inner Milky Way Plane Survey (CHIMPS) and the CO Hi-Resolution Survey (COHRS) and is a Large Program on the JCMT. The CHIMPS2 Inner Galaxy observations cover longitudes between 16° and 47° with $-0.5^\circ \leq b \leq 0.5^\circ$.

When combined with the complementary 13CO/C18O/12CO(1-0) survey at the Nobeyama 45m at matching 15 arcsec resolution and sensitivity, and other current CO surveys, CHIMPS2 provides a complete set of transition data with which to calculate accurate column densities, gas temperatures and turbulent Mach numbers, that would otherwise rely on estimations and underlying assumptions.

We constructed a novel catalogue of CHIMPS2 Inner Galaxy sources and linked their positions, physical properties and star-forming efficiency to the solenoidal modes of turbulence in the clouds. The range of Galactic longitudes covered by CHIMPS2 allows us to probe the relationship between turbulence modes and different Galactic environments, covering, in particular, the transition into the region spanned by the rotation of the Galactic bar and arm and inter-arm regions.

Section

Star Formation

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