

CS J=2-1 Observations towards Massive Dense Cores

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Abstract. We present the results of CS J=2-1 map observations towards 17 massive star forming regions selected from the previous CO line survey of cold IRAS sources along the Galactic plane (Yang *et al.* 2002). All sources were detected in CS J=2-1 and showed the existence of CS cores around the associated IRAS sources. The average values for core radius R , average line width $\overline{\Delta V}$, CS column density N_{CS} , volume density n , virial mass M_{VIR} and CS abundance $\log X(\text{CS})$ are 0.40 pc, 2.31 km s⁻¹, 1.6×10^{14} cm⁻², 5.5×10^4 cm⁻³, 620 M_⊙ and -8.93, separately. We examined the archival VLA radio continuum data for all sources, with 4 additional sources from the previous work (Ao, Yang, & Sunada 2004). Extended HII regions were found towards 12 sources and UCHII regions were associated with 5 sources. 4 remaining sources with high far-infrared luminosities and without radio continuum emission were classified as the candidates of high-mass protostellar objects (HMPOs), which were found to be characterized by low L_{FIR}/M_{VIR} ratios.

Keywords. stars: formation–ISM:clouds–ISM:molecules

References

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