

Nobeyama CO galactic plane survey

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Abstract:

We introduce the CO survey of the Galactic plane with Nobeyama 45-m telescope, FUGIN (FOREST Unbiased Galactic plane Imaging survey with Nobeyama 45m telescope), which is one of the legacy projects of Nobeyama Radio Observatory using the new multi-beam receiver, FOREST. We conducted simultaneous observations of ^{12}CO , ^{13}CO and C^{18}O $J=1-0$ lines to investigate the distribution, kinematics, and physical properties of both diffuse and dense molecular gas in the Galaxy. The angular resolution of $\sim 20''$ is highest for the Galactic plane survey in the $\text{CO}(J=1-0)$ lines. The mapping regions are a part of the 1st quadrant ($10^\circ \leq l \leq 50^\circ$, $|b| \leq 1^\circ$) and a part of the 3rd quadrant ($198^\circ \leq l \leq 236^\circ$, $|b| \leq 1^\circ$) of the Galaxy, which cover spiral arms, bar structure, and the molecular gas ring. We present initial results of the survey and results of some individual sources.