

Isotopic abundance ratios: What's up in the outer edge of the Milky Way?

Isotopic ratios (e.g. $^{12}\text{C}/^{13}\text{C}$ and $^{14}\text{N}/^{15}\text{N}$ ratios) measured within interstellar molecular clouds depend on the chemical evolution of the galaxy due to stellar nucleosynthesis, and thus they can provide unique constraints to the history of star formation in galaxies. Moreover, isotopic ratios also depend on local chemical fractionation effects, which are closely connected to the physical conditions of molecular clouds and cores (e.g. density and temperature, or UV radiation field). In this talk, I will review the main observed galactocentric trends of isotopic ratios, and I will introduce the CHEMOUT (CHEMical complexity in star-forming regions of the OUTER Galaxy) project. The latter include observations of a sample of 35 high-mass star-forming cores at Galactocentric distances up to about 23 kpc obtained with the IRAM 30m telescope. The study of isotopic ratios with these recent observations towards star-forming regions located in the outer Galaxy allow us for the first time to extend the prediction of Galactic Chemical Evolution models to these distances.

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