The SDSS/SEGUE surveys, in which JINA has played a fundamental role, have obtained spectroscopic metallicity estimates for over 400,000 stars. At low metallicities a significant fraction of these stars exhibit enhanced carbon-to-iron ratios \([C/Fe]\). These CEMP stars have recorded the production of carbon in the early Galaxy, apparently from several sources. One source is mass transfer from Asymptotic Giant-Branch binary companions. The other sources, likely to be connected with the \textbf{VERY FIRST element production sites in the Universe} – massive rapidly rotating stars and so-called faint supernovae.

The increasing fraction of CEMP stars in the Galaxy, as a function of declining metallicity, \([\text{Fe/H}]\). The dramatic increase in frequency at low metallicity can be accommodated by models for carbon production that differ between the inner- and outer-halo components of the Milky Way, and open the door for understanding the nature of the \textbf{very first element producing objects} in the Universe.

The increasing fraction of CEMP stars as a function of height above the Galactic plane, \(|Z|\), for two metallicity regimes. This observed behavior requires that the halo of the Milky Way is a complex, and likely dual system, comprising both an \textit{inner} and an \textit{outer halo}. Follow-up high-resolution spectroscopy with the world’s largest telescopes will help establish the detailed patterns of elemental abundances for these objects.

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