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Chemical Abundance Patterns of Very Metal-Poor Stars Dynamically Associated with Substructures in the Milky Way

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We present a detailed chemical abundance analysis for about 40 Very Metal-Poor (VMP; [Fe/H] < -2.0), selected from Sloan Digital Sky Survey (SDSS) and Large Sky Area Multi-Object Fiber Spectroscopic Telescope (LAMOST) surveys. Their high-resolution (R ~ 45,000) spectra were obtained with GEMINI/GRACES, and their atmospheric stellar parameters and various chemical abundance ratios were derived. Because most of them are associated with the well-known Milky Way (MW) substructures, such as the Gaia-Sausage-Enceladus, Thamnos, and others, we investigate their dynamical characteristics and chemical abundance patterns to characterize their progenitor dwarf galaxies. Their chemodynamical properties will provide valuable clues to infer their accretion history as well as the assembly history of the MW.

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