

## From Island Universes to Noisy Neighborhoods: the chemical evolution of galaxies

One of the fundamental astronomical discoveries just a century ago, was that the Milky Way is one of a vast number of “islands” within the cosmic sea. One of the great challenges of this century is to understand why they are neither isolated nor monolithic. The pollution of the gaseous, baryonic component by stellar nucleosynthesis is the unique evidence remaining over cosmic time to trace the populations and dynamics of galaxies. The study of the large scale abundance gradients and isotopic compositions is essential for constraining the history of star formation and galactic growth. The talk will review the changing perspectives and significance of the underlying astrophysical assumptions from the first structureless closed box models to the current generation of cosmological numerical simulations, and the new perspective regarding the stochasticity and inherent heterogeneity of that evolution.

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