Nuclear Physics in Astrophysics XI



Contribution ID: 205 Type: Invited talk

Impact of Stellar Yields on Galactic Chemical Evolution

Tuesday 17 September 2024 14:40 (25 minutes)

The chemical enrichment history of the elements observed in the Sun and in other stars is providing crucial information about the formation and the chemical evolution of the Milky Way. The production of specific elemental ratios and isotopes can be used to constrain different uncertainties affecting galactic chemical evolution (GCE) simulations. Theoretical stellar yields are one of the major uncertainties affecting GCE, as it is consistently reported across the literature.

In this talk I will present different cases where GCE have been used to directly test stellar yields, and even verify the impact of specific uncertainties affecting stellar nucleosynthesis products, like nuclear reaction rates and stellar models. Elements, isotopes and even several radioactive isotopes can be used for this purpose. Solar abundances provide a crucial benchmark for GCE. Isotopic ratios in presolar grains, signatures of radioactive isotopes from the Early Solar System material and elemental abundances of other stars also provide critical information for GCE theoretical calculations.

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Session Classification: Plenary Session