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Formation of Supernova Remnants in Dwarf Galaxies

Massive stars end their lives in powerful explosions known as supernovae (SNe), which evolve into supernova remnants (SNRs). SNRs carry the legacy of their progenitor stars, enriching the interstellar medium (ISM) with stellar material and playing a crucial role in shaping the ISM
ecosystem within galaxies.
In this study, we present the high-resolution simulations of SNRs in dwarf galaxies with the GIZMO code. Unlike previous studies, we employ realistic dwarf galaxy models from Tung & Chen (2025) and incorporate key physical processes governing SNR formation. Our results reveal how SNRs contribute to chemical enrichment from stellar to ISM and galactic scales. Furthermore, we find that the galactic environment significantly influences the formation and evolution of SNRs, highlighting the complex interplay between SNe feedback and dwarf galaxy dynamics.

Section

Galaxy/Extragalactic

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