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Sustaining galaxy gas turbulence by supernova feedback in dwarf galaxies

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This master's thesis investigates the role of supernova (SN) feedback in driving turbulence within the interstellar medium (ISM) of galaxies, a key factor in galaxy evolution. While SN feedback is considered to be one of the primary drivers of ISM turbulence, its efficiency across star-forming galaxies remains uncertain. This study focuses on dwarf galaxies in the local Universe, aiming to determine the efficiency of SN energy input needed to sustain turbulence and how this varies with given galaxy properties. Given the low star formation rates and slow energy dissipation in dwarf galaxies, the research will provide crucial insights into SN-driven turbulence. The methodology involves hierarchical Bayesian modeling of archival observational data from the LITTLE THINGS survey and GALEX, comparing results with previous studies of spiral galaxies. The findings are expected to refine theoretical models and improve sub-grid simulations of SN feedback in galaxy evolution.

Field of study

Astrophysics

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Session Classification: Poster session: Enjoy the posters!