The role of Type Ia supernova feedback on the second generation formation in globular clusters

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Abstract

Very little is known about the physical processes which determined the end of star formation in globular clusters (GC). By means of 3D hydrodynamic simulations, we study for the first time how the formation and the chemical properties of second generation (SG) stars in a massive proto-GC are affected by supernovae (SNe) Ia explosions, one likely cause for the quenching of star formation in these systems. In our model, the formation of SG stars starts ~ 40 Myr after the cluster birth and is due to the retention of the fresh ejecta of first generation asymptotic giant branch stars plus accretion of cold, pristine gas. At the same time, Type Ia SNe start exploding, carving hot and tenuous bubbles in the interstellar medium. In this talk, I will focus on SNe Ia effects on the iron and helium abundances and the role of various parameters in regulating the efficiency of Type Ia SN feedback.

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