

Probing the Evolution of the Stellar IMF Using SNe

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Abstract: There is now strong evidence for a non-standard stellar initial mass function in galaxies, especially at $z > 3$. The evidence comes from the unusually high gamma-ray burst rates per unit star-formation, the strong H α emission in $z \sim 5$ field galaxies and the observed stellar mass density compared to the integral of the star-formation rate density. We present how a multi-epoch survey with WFIRST can detect pair-instability and core-collapse SNe at high redshift and how the rates of such supernovae can constrain the evolution of the IMF.