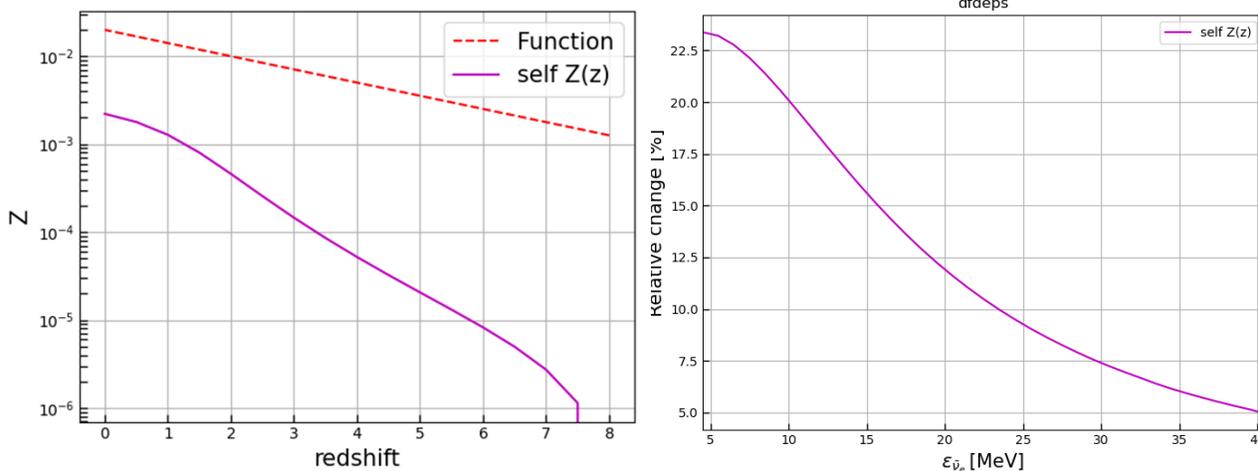


Extension of the SSE and BSE Codes Incorporating Extremely Metal-Poor Stellar Evolution Models toward Improved Predictions of the DSNB.

Akira Nagasaki(TUS), Hideyuki Suzuki(TUS)

1. Motivation

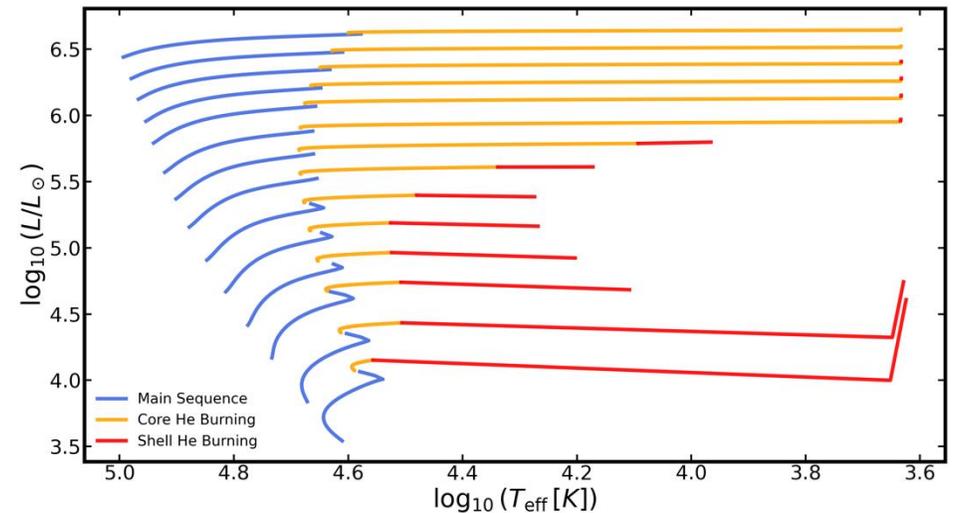
- ◆ Current DSNB calculations with SSE/BSE rely on extrapolation in the extremely low-metallicity regime.
- ◆ Our previous studies show that the metallicity distribution strongly affect DSNB predictions.
- **Model stellar evolution of extremely metal-poor (EMP) stars more consistently.**



Sugiura.(2026)

2. This Work

- ◆ Incorporated EMP stellar evolution models based on Tanikawa et al.(2020) into SSE/BSE.
- ◆ Resolved physically inconsistent neutrino emission in massive cores and implemented PISNe in the high-mass regime.
- ◆ Exploring a redshift-dependent IMF for early-Universe star formation.



Stellar evolution tracks for $8 - 160M_{\odot}$ at $Z/Z_{\odot} = 10^{-8}$