

A Chemical Probe into the Star Formation History of Our Galaxy Using the SAGA Database by Takuma Suda @ Hokkaido University

<http://saga.sci.hokudai.ac.jp/>

Near Field Cosmology with AGB Stars

Stellar Evolution → **Binary Mass Transfer** → **Transition to Low-Mass IMF**

- C, N, (s-process) enhancement by
- ★ Hydrogen ingestion into He-flash convective zones at $[\text{Fe}/\text{H}] \lesssim -2.5$.
- ★ Third dredge-up

High-Mass Peaked IMF

- ★ Peaked at $10 M_{\odot}$ derived from C-star statistics.

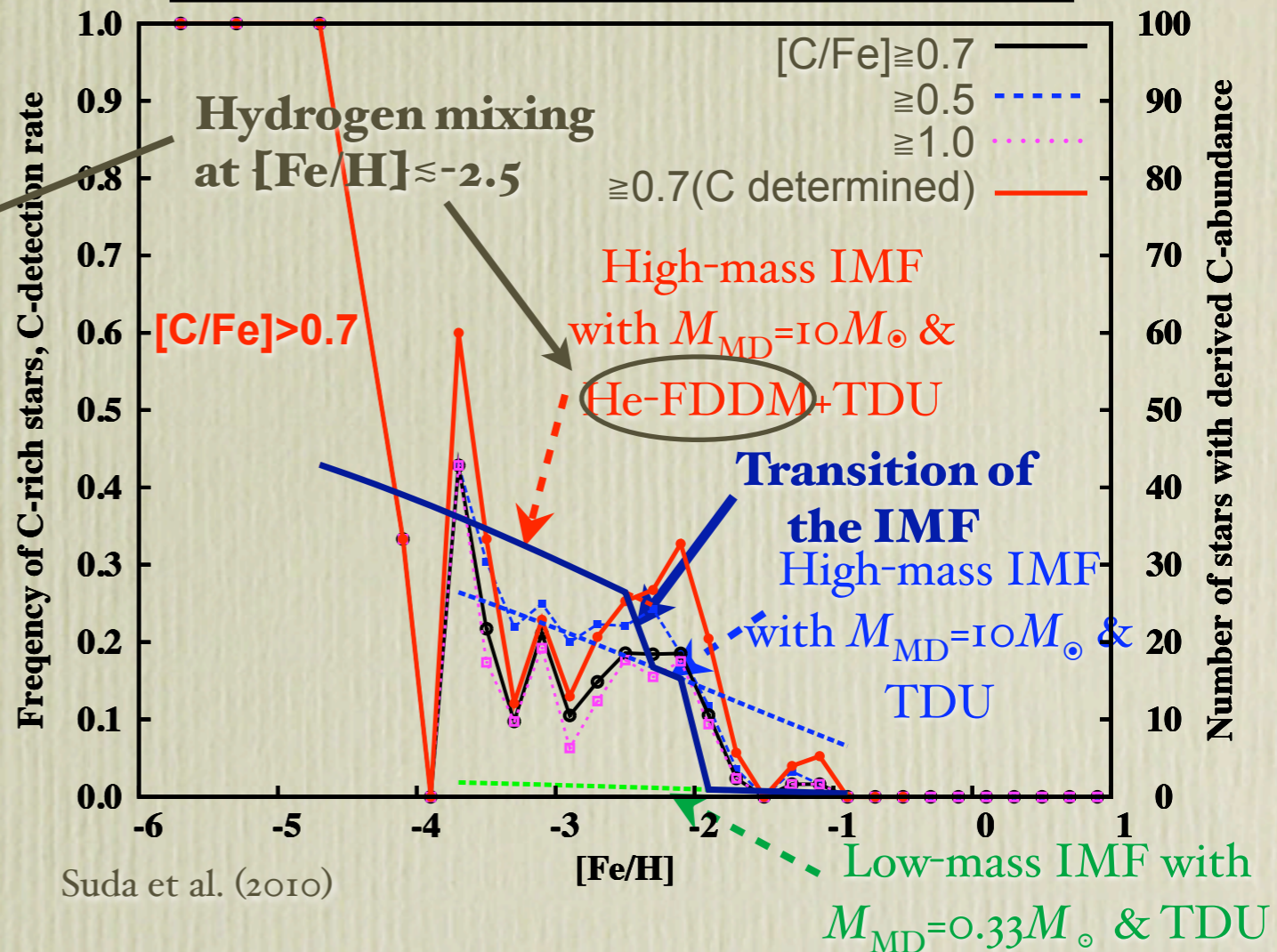
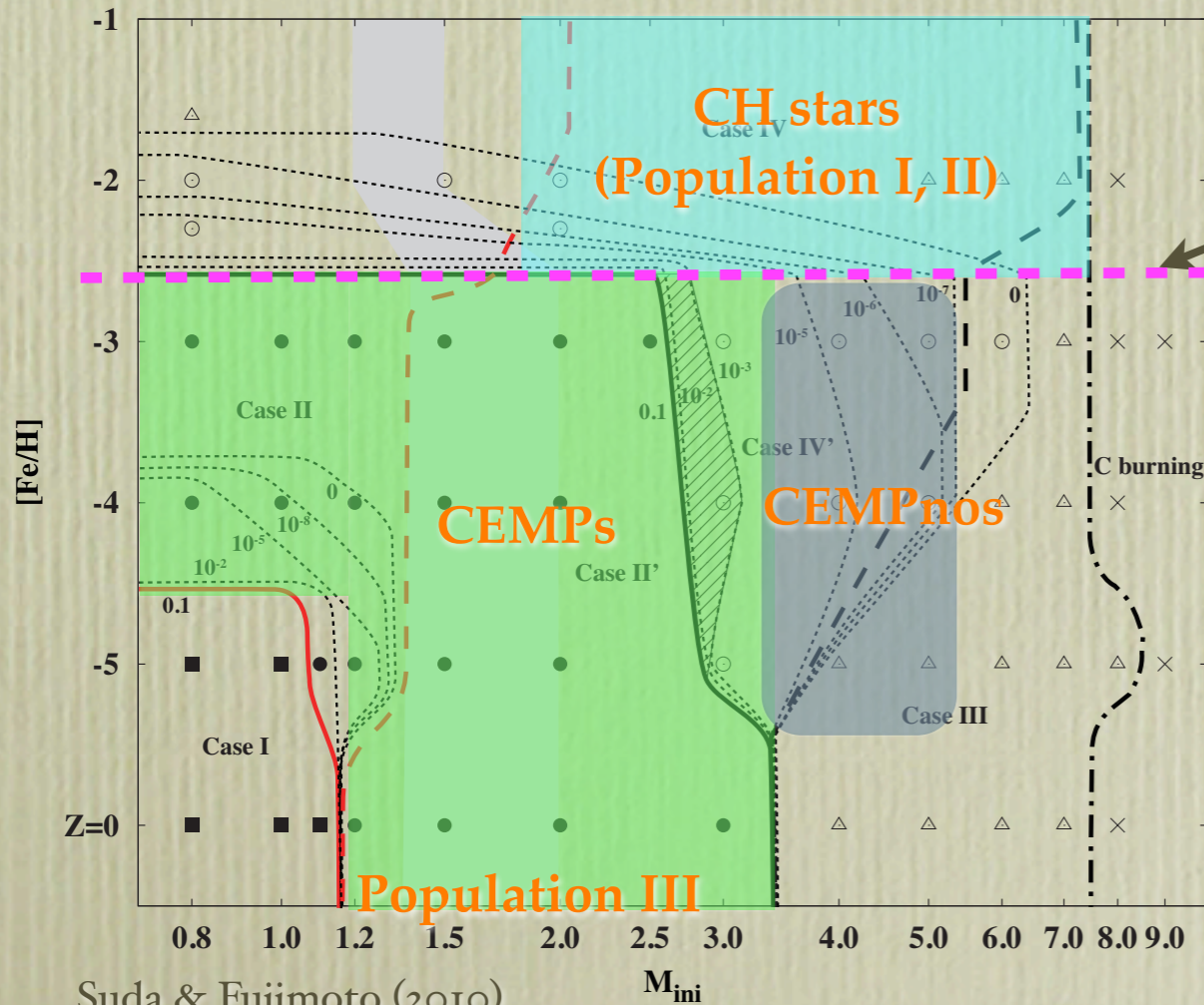
Carbon Enhancement

Carbon-Enhanced Extremely Metal-Poor Stars

- ★ $[\text{Fe}/\text{H}] < -2.5$ and $[\text{C}/\text{Fe}] > 0.7$.

Constant IMF cannot account for the transition of C-star frequency.

Stellar Evolution at Low-Metallicity



Suda & Fujimoto (2010),
Fujimoto et al. (2000)

Suda et al. (2010)