



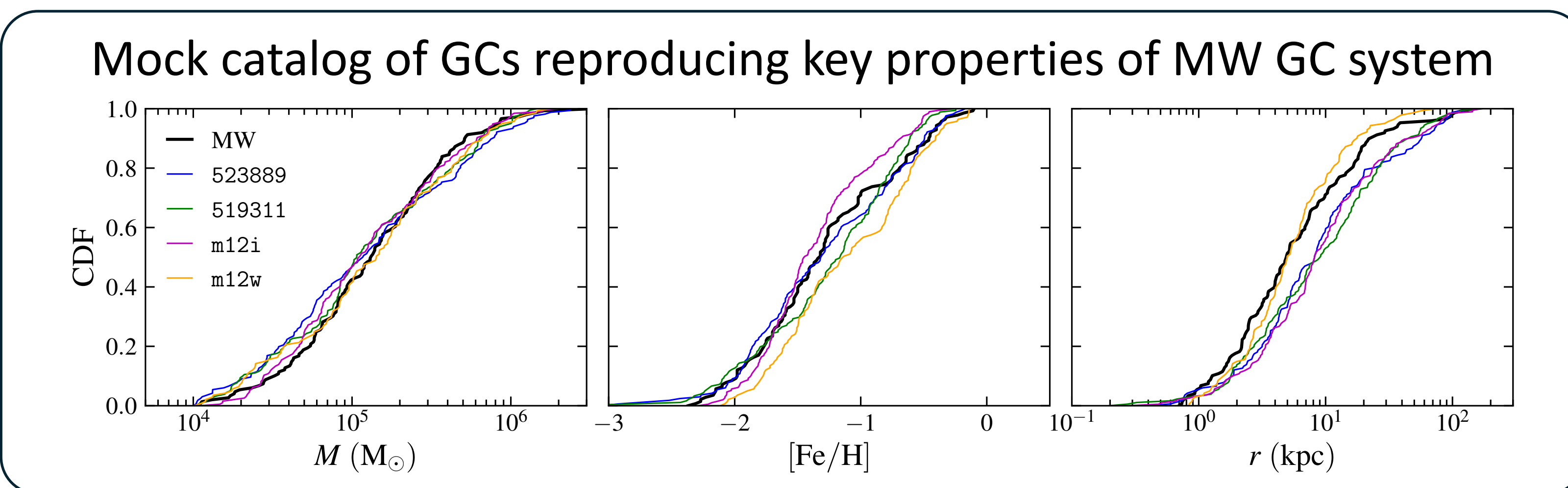
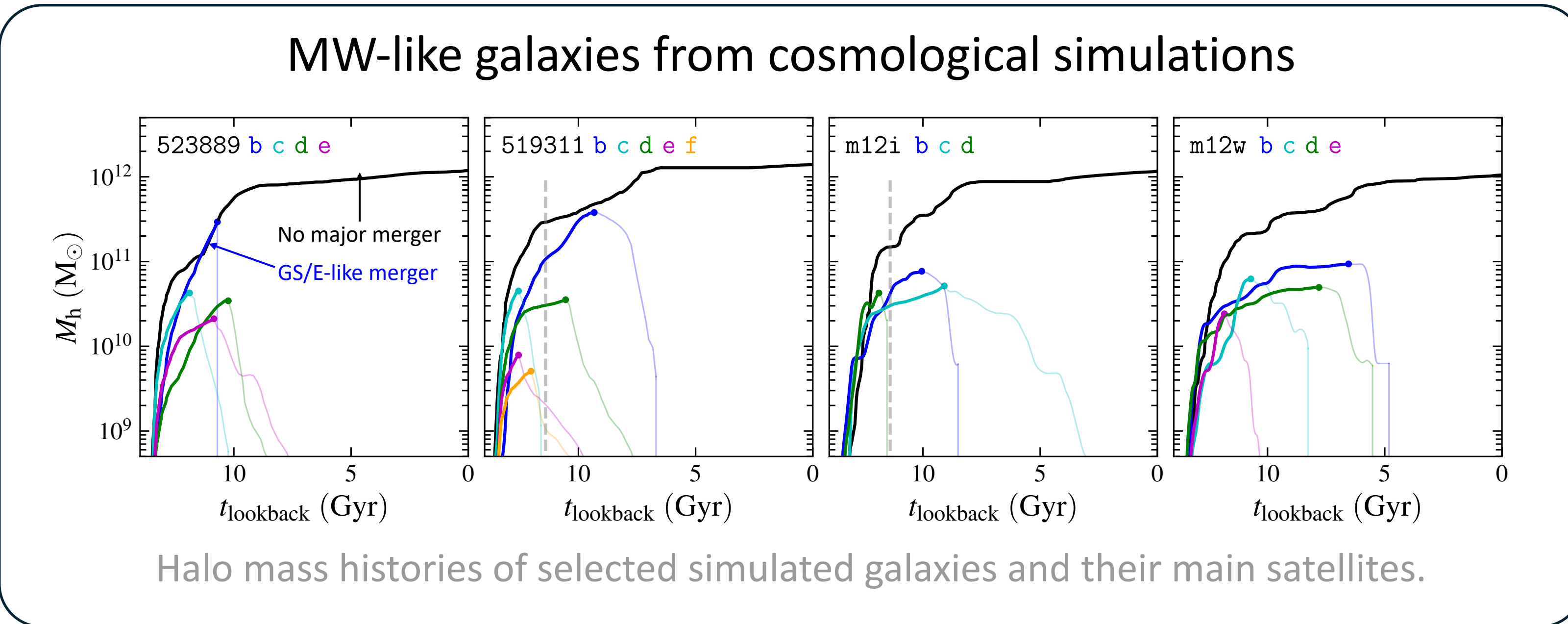
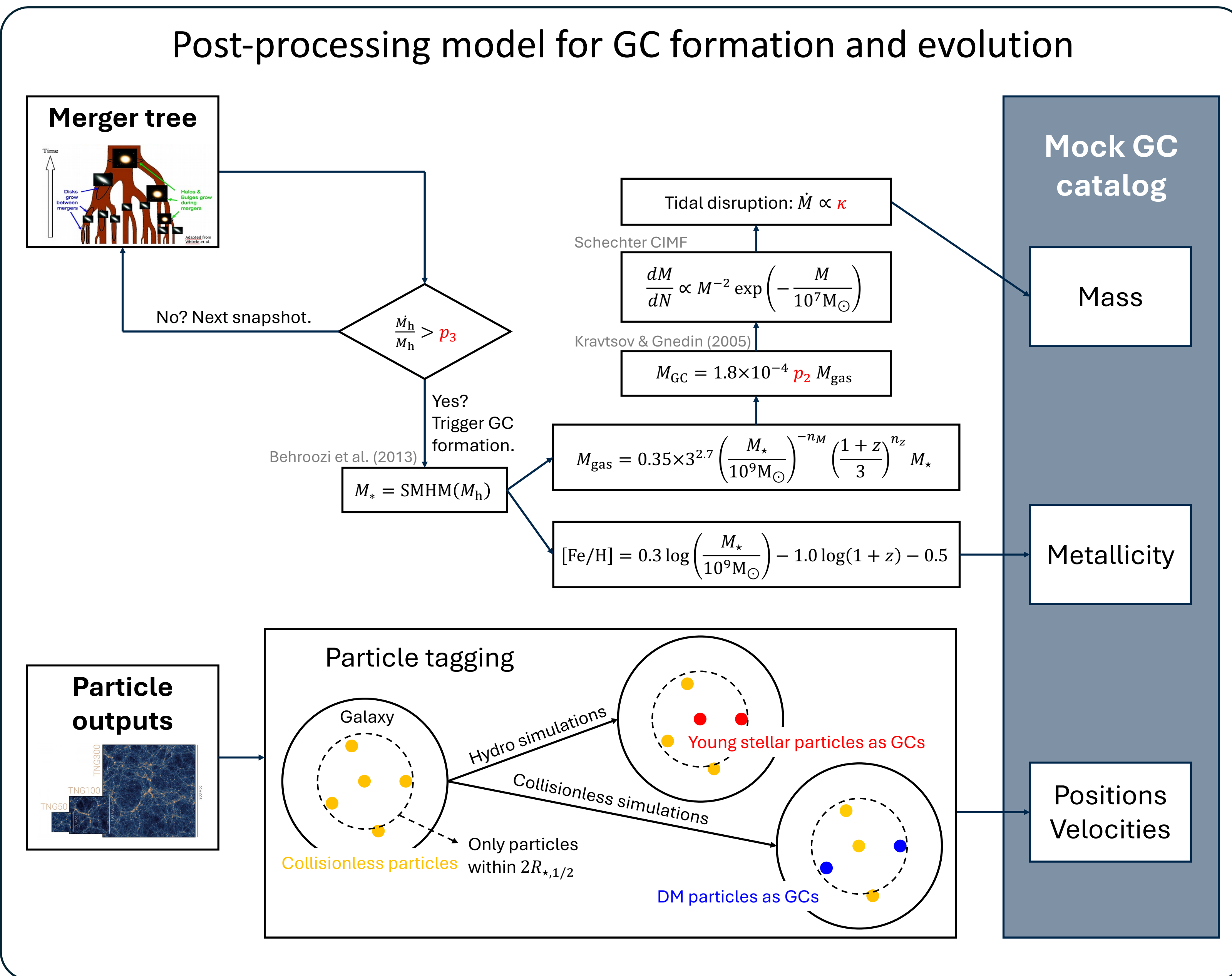
Unveiling galaxy assembly with star clusters

Yingtian "Bill" Chen and Oleg Y Gnedin (University of Michigan)

Abstract: how well can we unveil the assembly history of the Milky Way (MW) using chemical, spatial, kinematic, and age properties of globular clusters (GCs)? To answer this question, we

- Generate a **mock catalog** of GCs in simulated galaxies with similar assembly characteristics to the MW.
- **Assess** widely-used clustering and classification algorithms on this catalog using mock variables.
- Apply the assessed methods on **real data** to classify the progenitor galaxies of MW GCs.

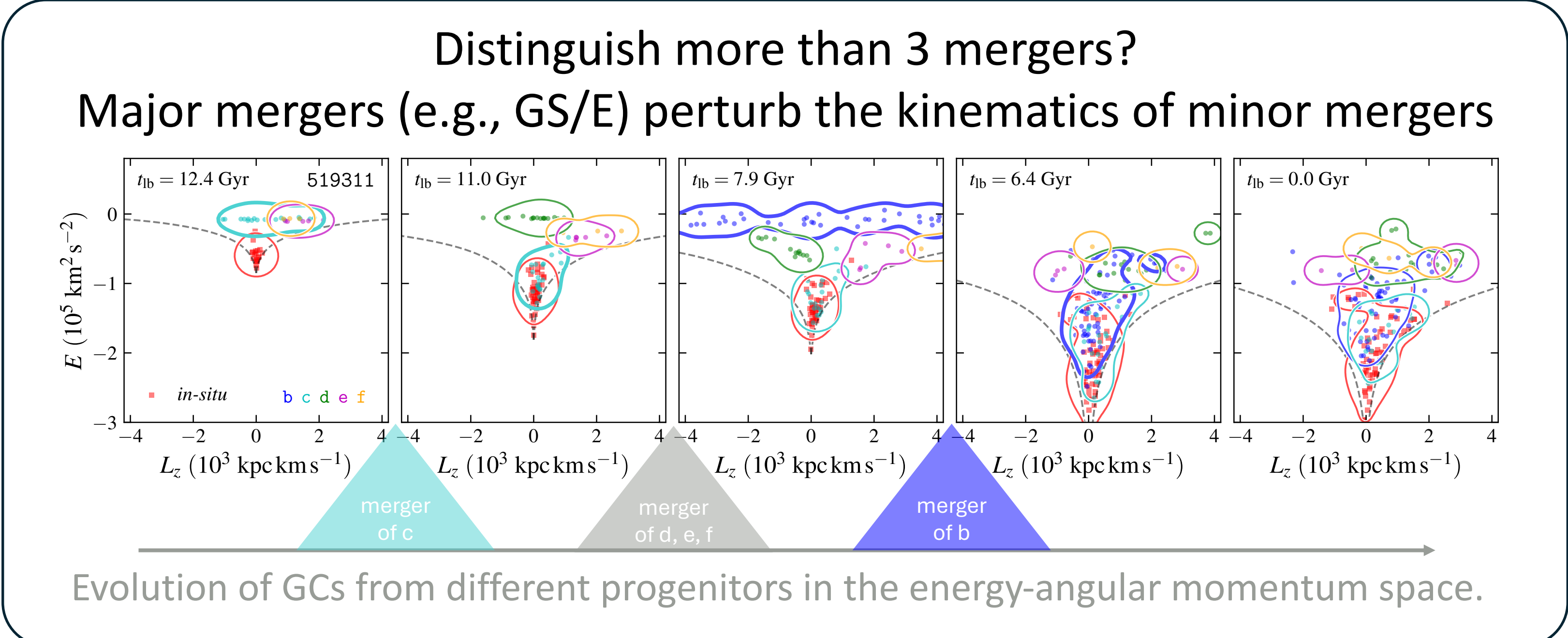
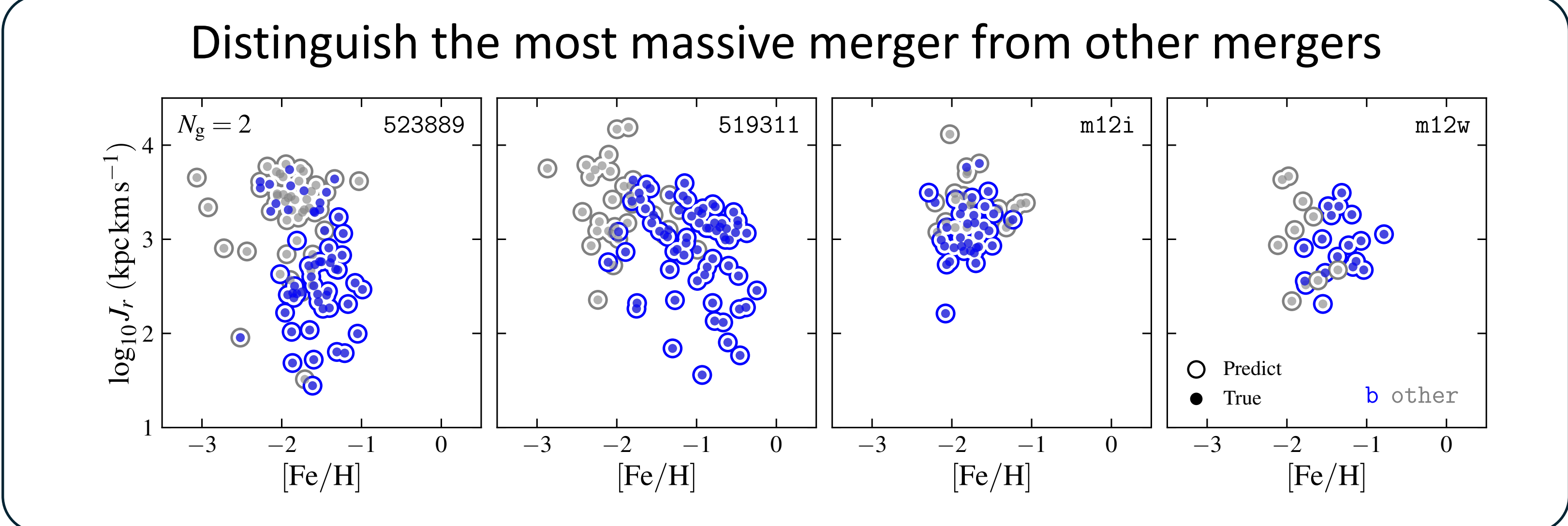
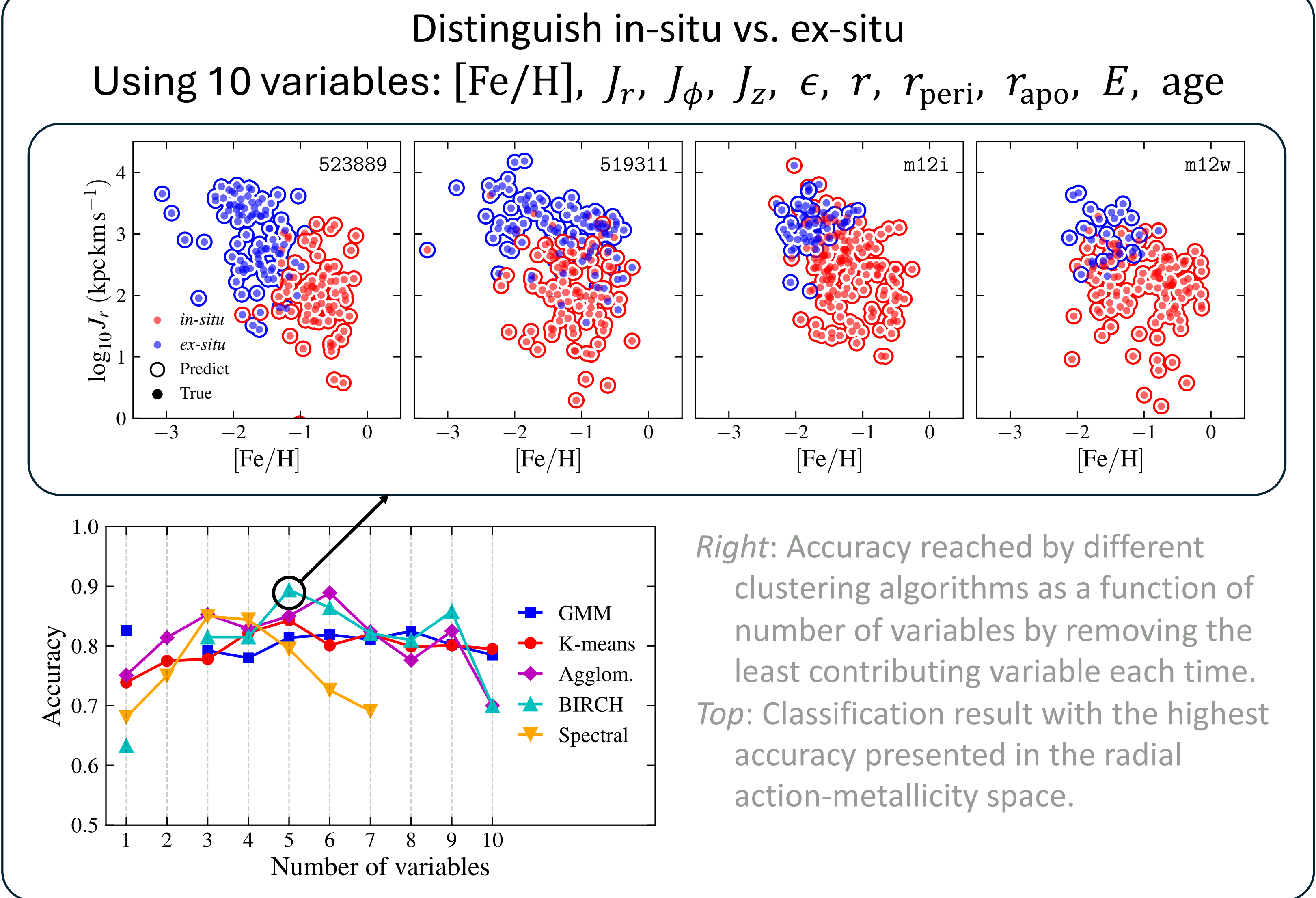
Mock catalog (CG24a,b):



References:

- Y Chen and O Y Gnedin (2024a) *Catalogue of model star clusters in the Milky Way and M31 galaxies*, MNRAS **527**, 3692 (CG24a).
- Y Chen and O Y Gnedin (2024b) *Galaxy assembly revealed by globular clusters*, OJA **7**, 23 (CG24b).

Assessment of algorithms (CG24b):



Apply to real data (CG24b):

