

A generative finite mixture model

- ▶ in order to recover the formation history of the halo
- ▶ we propose a generative model in the form of a finite mixture model
- ▶ where each observed point comes from one of m mixture components (pictured)
- ▶ since each mixture component has an associated mass and accretion time range, the formation history is specified if we know what percentage of observations come from each mixture component
- ▶ our goal, then, is to determine the mixing proportions, π
- ▶ note that the observed points we are attempting to fit are generated via simulation, not our proposed generative model
- ▶ we don't know the true generative method, and are proposing a reasonable one that we think can be fit, and that will reveal the formation history