A generative finite mixture model

Mixture components

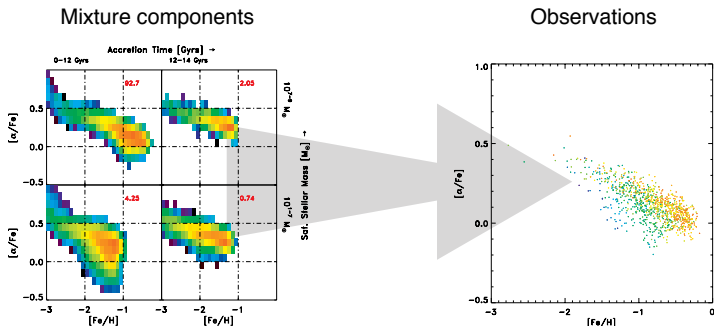Observations

$$\left[\frac{Fe}{H}, \frac{\alpha}{Fe}\right]_{i=1}^{N} \text{ i.i.d} \sim f(x, y) = \sum_{j=1}^{m} \pi_j f_j(x, y)$$

Where the mixing proportions, $\boldsymbol{\pi}$, give the formation history.