Definitions

- For notational simplicity, $x = \dfrac{\alpha}{Fe}$ and $y = \dfrac{Fe}{H}$
- Formally, given m mixture components, the density from which all observations are drawn is as shown
- each observation comes from one of the mixture components with some probability π_j
- The mixing proportions, $\boldsymbol{\pi}$ must be non-negative, and sum to 1
- the mixture components, f_j, are known and taken as given