

$$P(\mathbf{x}_i | s_{ij} = 1, \theta^{(n)}) = \frac{1}{Z} \exp \left[ -\frac{1}{2} (\mathbf{x}_i - \boldsymbol{\mu}_j^{(n)})^T \boldsymbol{\Sigma}^{-1} (\mathbf{x}_i - \boldsymbol{\mu}_j^{(n)}) \right]$$