

$$P\left(z_k \mid x_k^1, x_k^2, \dots, x_k^M\right) = \gamma \exp \left[ -\frac{1}{2} \left( \sum_{h=1}^M \frac{1}{\sigma_h^2} + \frac{1}{\sigma_0^2} \right) z_k^2 - 2 \left( \sum_{h=1}^M \frac{x_h^k}{\sigma_h^2} + \frac{z_0}{\sigma_0^2} \right) z_k \right]$$