

$$p(v \mid x, g, z) = \mathcal{N}\left(v; \frac{z}{\sigma_x} C_{v|x,g,z} A^T x, C_{v|x,g,z}\right), \quad C_{v|x,g,z} = \left(\frac{z^2}{\sigma_x} A^T A + \left(\sum_{j=1}^K g_j C_j \right)^{-1} \right)^{-1}$$