$$l(K_l, K_{lm}) = \prod_{m}^{M_l} \mathrm{N}(K_l; K_{lm}, \frac{1}{e^{\tau_K}}) = \mathrm{N}(K_l; \mu^*_{K_l}, \sigma^{*2}_{K_l})$$

$$\mu^*_{K_l} = \sum_{m}^{M_l} \frac{y_{lm}}{M_l} \qquad \sigma^{*2}_{K_l} = \frac{1}{M_l e^{\tau_K}}$$

$$l(K, K_l) = \prod_{l}^{L} \mathrm{N}(K; \mu^*_{K_l}, \frac{1}{\frac{1}{e^{\sigma^{*2}_{K_l}}} + \sigma^{*2}_{K_l}}) = \mathrm{N}(K; \mu^*_K, \sigma^{*2}_{K_l})$$

$$\mu^*_K = \sum_{L}^{l} \frac{\mu^*_{K_l}}{\frac{1}{e^{\sigma^{o2}_K}} + \sigma^{*2}_K} \Bigg/ \sum_{L}^{l} \frac{1}{\frac{1}{e^{\sigma^{o2}_K}} + \sigma^{*2}_K} \qquad \sigma^{*2}_{K_l} = 1 \Bigg/ \sum_{L}^{l} \frac{1}{\frac{1}{e^{\sigma^{o2}_K}} + \sigma^{*2}_K}$$

$$\pi(K|K_{lm}) = \mathrm{N}(K; \frac{\sigma^{*2}_K K_\mu + \frac{1}{\eta^p_K}\mu^*_K}{\sigma^{*2}_K + \frac{1}{\eta^p_K}}, \frac{\sigma^{*2}_K \frac{1}{\eta^p_K}}{\sigma^{*2}_K + \frac{1}{\eta^p_K}})$$

$$\pi(K_l|K, K_{lm}) = \mathrm{N}(K_l; \frac{\sigma^{*2}_{K_l} K + \frac{1}{e^{\sigma^{o2}_K}}\mu^*_{K_l}}{\sigma^{*2}_{K_l} + \frac{1}{e^{\sigma^{o2}_K}}}, \frac{\sigma^{*2}_{K_l} \frac{1}{e^{\sigma^{o2}_K}}}{\sigma^{*2}_{K_l} + \frac{1}{e^{\sigma^{o2}_K}}})$$