$$\boldsymbol{\mu}^{(k+1)} \leftarrow (1-\gamma)\boldsymbol{\mu}^{(k)} + \gamma \sum_{i=1}^{N} \hat{f}(\mathbf{z}_i)\mathbf{z}_i \, ,$$

$$\Sigma^{(k+1)} \leftarrow (1-\gamma)\Sigma^{(k)} + \gamma \sum_{i=1}^{N} \hat{f}(\mathbf{z}_i)\big(\mathbf{z}_i - \boldsymbol{\mu}^{(k)}\big)\big(\mathbf{z}_i - \boldsymbol{\mu}^{(k)}\big)^{\top} + (2\gamma - 1)\boldsymbol{\mu}^{(k)}\boldsymbol{\mu}^{(k)\top} + 2\boldsymbol{\mu}^{(k+1)}\boldsymbol{\mu}^{(k)\top} - \boldsymbol{\mu}^{(k+1)}\boldsymbol{\mu}^{(k+1)\top},$$