Class-weighted measure as appears in paper

The neighbourhood of codeword, $\mathbf{c}_\phi$, consists of the Gaussians such that

$$G(\mu_m, \mathbf{\Sigma}_m) \in \nu_\phi \;\; iff \;\; \frac{1}{D}\sum_{i=1}^{D} \frac{(c_\phi(i) - \mu_m(i))^2}{\sqrt{(\sigma^2_{avg}(i)\sigma^2_{c_\phi}(i))}} \leq \Theta \quad (1)$$

where $\sigma^2_{c_\phi}(i)$ is the ith diagonal element of the cluster centroid covariance, $\mathbf{\Sigma}_{\mathbf{c}_\phi} = 1/size(\chi_\phi)\sum_{m\in\chi_\phi}\mathbf{\Sigma}_m$, and $\sigma^2_{avg}(i)$ is the ith diagonal element of the average covariance of all the components in the HMM set.

Actual Divergence-like distance metric used

The neighbourhood of codeword, $\mathbf{c}_\phi$, consists of the Gaussians such that

$$G(\mu_m, \mathbf{\Sigma}_m) \in \nu_\phi \;\; iff \;\; \frac{1}{D}\sum_{i=1}^{D} \frac{(c_\phi(i) - \mu_m(i))^2}{\sqrt{(\sigma^2_{avg}(i)\sigma^2_m(i))}} \leq \Theta \quad (2)$$

where $\sigma^2_{avg}(i)$ is the ith diagonal element of the average covariance of all the components in the HMM set, and $\sigma^2_m(i)$ the same for the mth component.