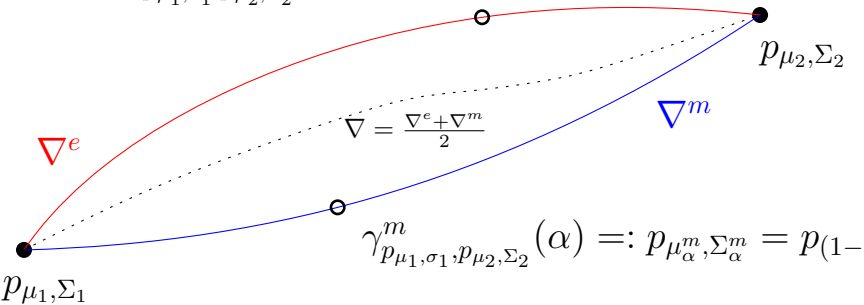
$$
\begin{aligned}
\mu_\alpha^e &= \Sigma_\alpha^e \left((1-\alpha)\Sigma_1^{-1}\mu_1 + \alpha\Sigma_2^{-1}\mu_2\right) \\
\Sigma_\alpha^e &= \left((1-\alpha)\Sigma_1^{-1} + \alpha\Sigma_2^{-1}\right)^{-1}
\end{aligned}
$$

$\gamma^e_{p_{\mu_1,\sigma_1},p_{\mu_2,\Sigma_2}}(\alpha) =: p_{\mu_\alpha^e,\Sigma_\alpha^e} = p_{(1-\alpha)\theta_1+\alpha\theta_2}$ $\qquad \theta = (\Sigma^{-1}\mu, \frac{1}{2}\Sigma^{-1})$



$$
\begin{aligned}
\mu_\alpha^m &= (1-\alpha)\mu_1 + \alpha\mu_2 =: \bar{\mu}_\alpha \\
\Sigma_\alpha^m &= (1-\alpha)\Sigma_1 + \alpha\Sigma_2 + (1-\alpha)\mu_1\mu_1^\top +
\end{aligned}
$$