$p(\xi_k)$ with $\alpha=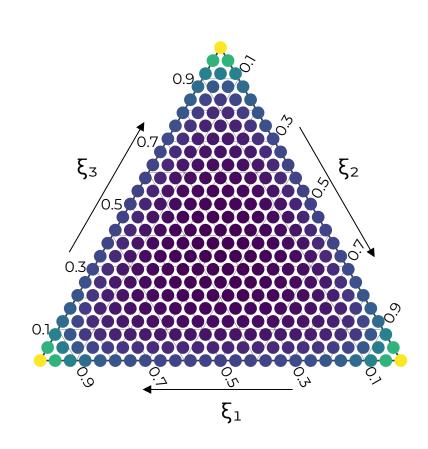[0.5, 0.5, 0.5]$