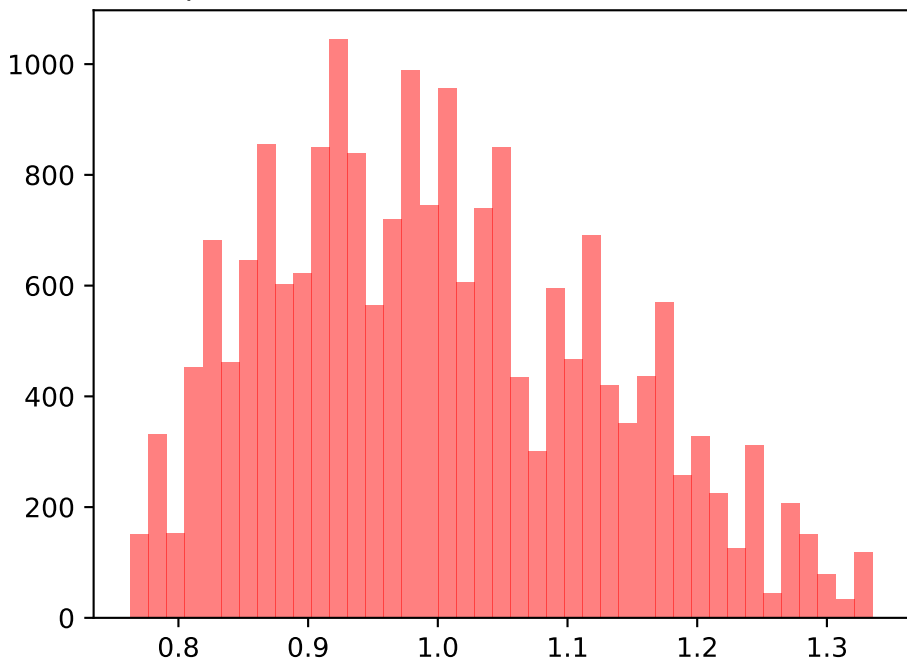Product space simulation

Re : $\mu = 1.000241$, $\sigma = 0.127045$, $\varepsilon = 0.000898$

Im : $\mu = -0.000136$, $\sigma = 0.010659$, $\varepsilon = 0.000075$