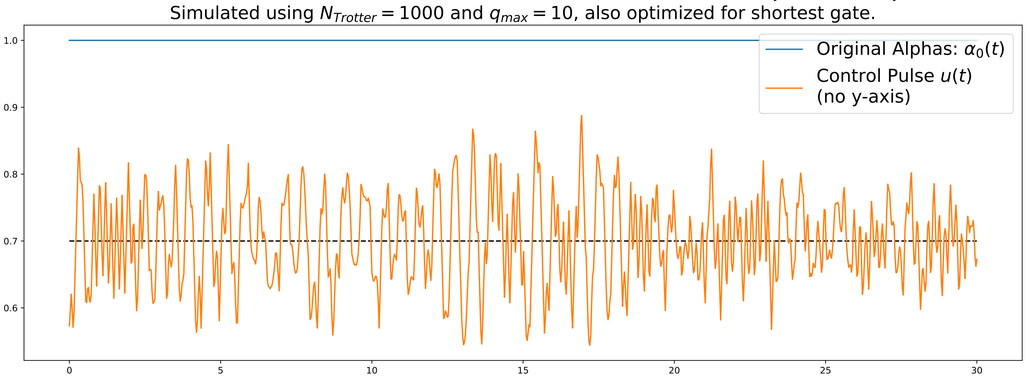
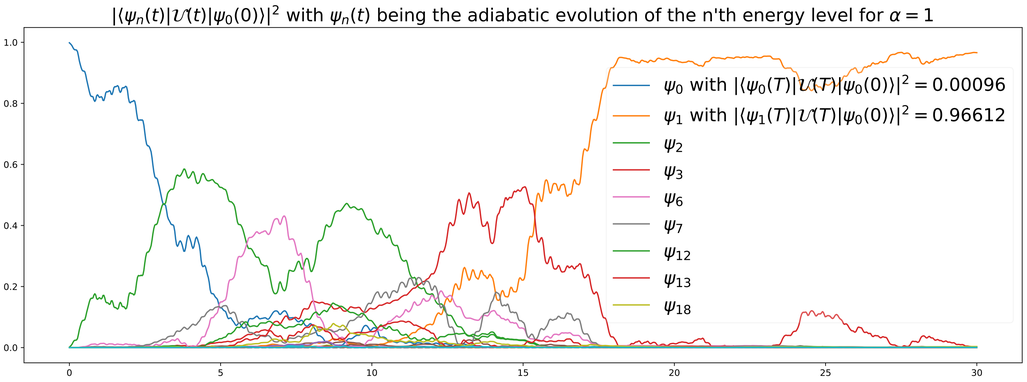
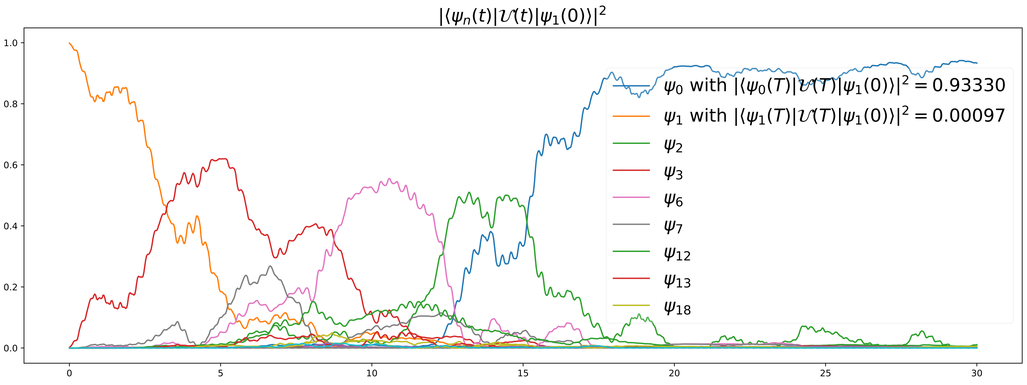
The control pulse $u(t)$ from $t = 0ns$ to $t = T = 30ns$ for $\alpha = 1$ with $\max(E_J \Delta u) \leq 0.005 E_J$
Simulated using $N_{Trotter} = 1000$ and $q_{max} = 10$, also optimized for shortest gate.



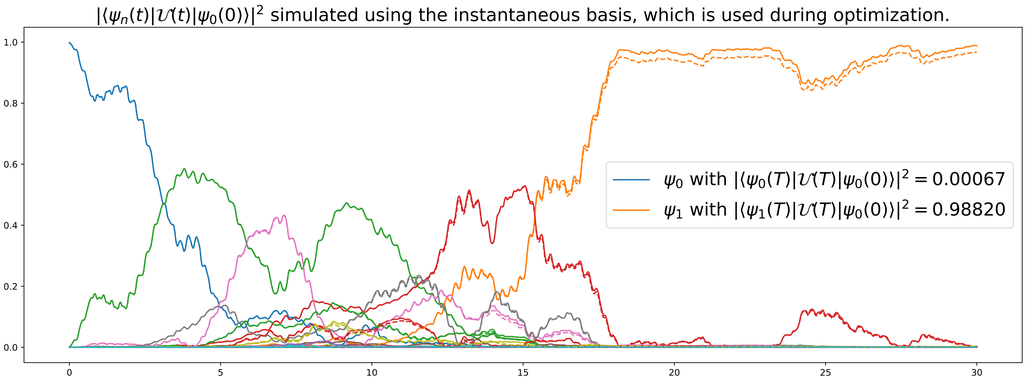
$|\langle\psi_n(t)|\mathcal{U}(t)|\psi_0(0)\rangle|^2$ with $\psi_n(t)$ being the adiabatic evolution of the n'th energy level for $\alpha = 1$



$|\langle\psi_n(t)|\mathcal{U}(t)|\psi_1(0)\rangle|^2$



$|\langle\psi_n(t)|\mathcal{U}(t)|\psi_0(0)\rangle|^2$ simulated using the instantaneous basis, which is used during optimization.



$|\langle\psi_n(t)|\mathcal{U}(t)|\psi_1(0)\rangle|^2$