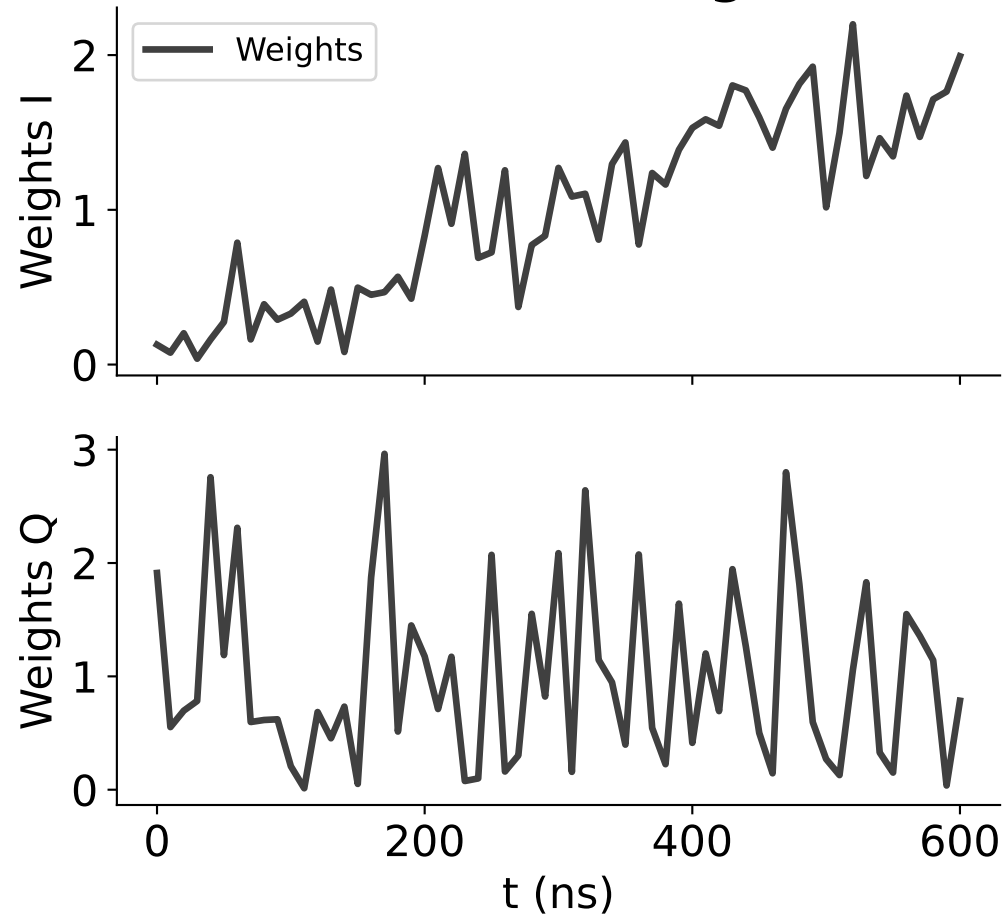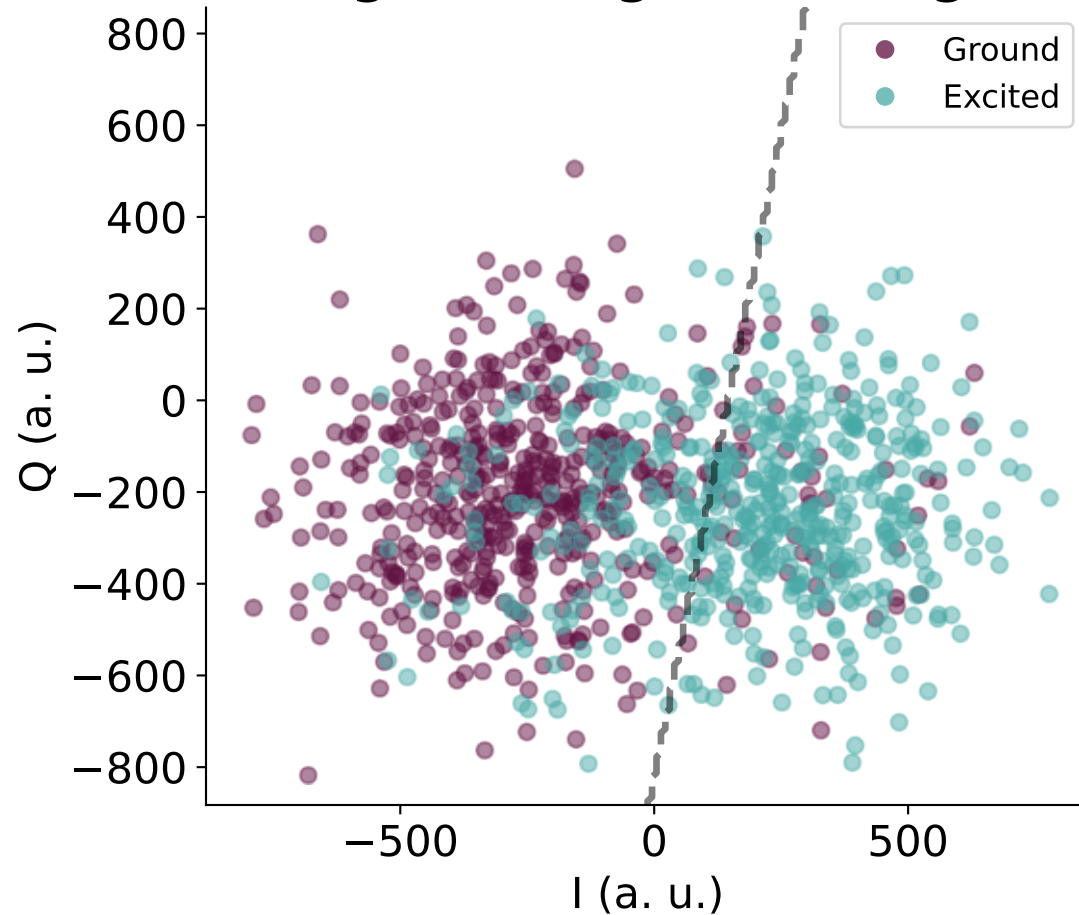Fidelity Analysis for realistic