

PC4230 Project: Quantum Dynamics Simulation

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This is made with help from Prof Kwek Leong Chuan, and Straeter Moritz. The content will be changed or modified along my FYP journey.

I. SIMPLE HARMONIC OSCILLATOR (SHO)

II. A SIMULATION: TIME-DEPENDENT PERTURBATION

III. TRANSITION PROBABILITIES

A. Rotating-wave Approximation

B. Experiment 1

IV. FURTHER EXPERIMENTS

[1] J. Romero, J. P. Olson, and A. Aspuru-Guzik, Quantum autoencoders for efficient compression of quantum data, Quantum Science and Technology **2**, 045001 (2017).

[2] V. Scarani, S. Iblisdir, N. Gisin, and A. Acín, Quantum cloning, Reviews of Modern Physics **77**, 1225–1256 (2005).