TBC: Quantum Rabi RWA

Lancaster University Postgraduate Forum

Luke Mader, joint work with Daniel Elton and Robin Hillier 25/03/2025

Rough Plan

- 1. Hilbert space formulation of QM
- The Quantum Rabi model for a two-state atom interacting with a laser
- 3. The Jaynes-Cumming model
- 4. What is an approximation? How do we justify it?
- 5. Rotating frames
- 6. Neglecting counter-rotating terms
- 7. Asymptotic justifications