PROJECT OUTLINE

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This project investigates a phase bistability in the driven Jaynes Cummings model, and its representation in terms of quasiprobability functions.

By performing computational simulations and analytical models we plan to investigate the Jaynes-Cummings model from this viewpoint, with particular focus on the dispersive case - i.e. when the cavity and qubit are far detuned from one another.

1. Timeline

Until Christmas 2015 we will be familiarising ourselves with the driven Jaynes-Cummings model in the resonant case, starting with the paper by Carmichael that is summarised in the Literature Review. Beyond that, we plan to move to the dispersive regime, and compare results from this methodology with those produced by the other Masters student on the project who is producing Monte Carlo simulations of the same system.