Ensemble control of n-level systems via combined adiabatic and rotating wave approximations

Ruikang LIANG, LJLL - Paris   **Ugo BOSCAIN**, LJLL - Paris

Rémi ROBIN, CAS - Paris   **Mario SIGALOTTI**, LJLL - Paris

In this work, we explore the ensemble control problem of n-level quantum systems with unknown parameters. Under suitable frequency conditions, we justify the application in cascade of the rotating wave approximation and the adiabatic approximation. This enables the construction of a real-valued control law that realizes population inversion between two arbitrary eigenstates. We are also going to present some illustrative numerical examples for further insight.

Contact : ruikang.liang@sorbonne-universite.fr