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New Results for Quantum Control Problems

Hamiltonian identification problem in presence of large perturbations

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Abstract: The inversion problem of recovering the Hamiltonian and dipole moment is considered in the quantum control framework. The inversion process uses as inputs some observables for each admissible control. As the implementation of the control is sometimes noisy, the data available is only in the form of the law of the measured observable. Diverse models of noise are considered. And in some cases it is still proved that the inversion process has unique solutions (up to some phase factors) and the distribution of the noise in the control can also be recovered. Numerical illustrations support the theoretical results.