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A generalised approach to measurement-based feedback Control of a Quantum System in a Harmonic Potential

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Measurement-based feedback control works by measuring the system and estimating its properties, and providing feedback in order to reach the desired state. This work investigates the dynamics of a system under continuous measurement and feedback. It turns out that feedback plays a limited role in determining the steady state of a particle in a harmonic trap. Instead, feedback can be used to compensate for a part of the Hamiltonian of the system or to lower the energy of the particle. Simulations, which employ the second-order weak scheme, illustrate these effects and indicate the local stability of the steady state solution.

Apply to be considered for a student ; award (Yes / No)?

yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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