

Abstract Submitted
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Stabilization and feedback control of weak measurement monitored quantum oscillators¹ HERMANN UYS, CSIR/Stellenbosch University, Stellenbosch, South Africa, PIETER DU TOIT, National Metrological Institute of South Africa, Pretoria, South Africa, SHAUN BURD, NIST/Colorado University, Boulder, Colorado, USA, THOMAS KONRAD, University of KwaZulu-Natal, Durban, South Africa — We study feedback control of quantum oscillators, monitored through periodic weak measurement. By implementing reversals of measurement perturbations based on a Bayesian estimate of the state dynamics, we demonstrate suppressed measurement noise leading to greater oscillator stability and improved quantum feedback control.

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