Selected Abstracts from Other Physical Review Journals

Abstracts of papers that are published in other Physical Review journals and may be of interest to Physical Review E readers are printed below.

Quantum and classical chaos for a single trapped ion. A. J. Scott,[1] C. A. Holmes,[1] and G. J. Milburn[2] [1]*Department of Mathematics, The University of Queensland, Queensland 4072, Australia* [2]*Department of Physics, The University of Queensland, Queensland 4072 Australia* (Received 8 March 1999; published 8 December 1999)

In this paper we investigate the quantum and classical dynamics of a single trapped ion subject to nonlinear kicks derived from a periodic sequence of Gaussian laser pulses. We show that the classical system exhibits diffusive growth in the energy, or ''heating,'' while quantum mechanics suppresses this heating. This system may be realized in current single trapped-ion experiments with the addition of near-field optics to introduce tightly focused laser pulses into the trap.[S1050-2947(99)03312-0] [Phys. Rev. D **59**, 123519 (1999)]

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