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 A readers are printed below.

Stochastic unraveling of time-local quantum master equations beyond the Lindblad class. Ulrich Kleinekathöfer,[1,2] Ivan Kondov,[2] and Michael Schreiber[1,2] [1]*International University Bremen, P.O. Box 750 561, 28725 Bremen, Germany,* [2]*Institut für Physik, Technische Universität, 09107 Chemnitz, Germany.* (Received 2 April 2002; published 3 September 2002)

A method for stochastic unraveling of general time-local quantum master equations (QME) which involve the reduced density operator at time *t* only is proposed. The present kind of jump algorithm enables a numerically efficient treatment of QMEs that are not of Lindblad form. So it opens large fields of application for stochastic methods. The unraveling can be achieved by allowing for trajectories with negative weight. We present results for the quantum Brownian motion and the Redfield QMEs as test examples. The algorithm can also unravel non-Markovian QMEs when they are in a time-local form like in the time-convolutionless formalism. [Phys. Rev. E **66**, 037701 (2002)]