Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Performance analysis of continuous-time solvers for quantum impurity models EMANUEL GULL, Institut fuer theoretische Physik, ETH Zuerich, CH-8093 Zuerich, Switzerland, PHILIPP WERNER, ANDREW MILLIS, Columbia University, 538 West, 120th Street, New York, NY 10027, USA, MATTHIAS TROYER, Institut fuer theoretische Physik, ETH Zuerich, CH-8093 Zuerich, Switzerland — Impurity solvers play an essential role in the numerical investigation of strongly correlated electrons systems within the "dynamical mean field" approximation. Recently, a new class of continuous-time solvers has been developed, based on a diagrammatic expansion of the partition function in either the interactions or the impurity-bath hybridization. We investigate the performance of these two complimentary approaches and compare them to the well-established Hirsch-Fye method. The results show that the continuous-time methods, and in particular the version which expands in the hybridization, provide substantial gains in computational efficiency.

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Date submitted: 26 Nov 2006 Electronic form version 1.4