

Abstract Submitted
for the DNP11 Meeting of
The American Physical Society

Towards quantum transport for central collisions of nuclei and of clouds of ultracold quantum gases¹ BRENT BARKER, National Superconducting Cyclotron Laboratory, Michigan State University, ARNAU RIOS, University of Surrey, PAWEL DANIELEWICZ, National Superconducting Cyclotron Laboratory, Michigan State University — Efforts are on the way to develop a practical non-equilibrium Green's functions approach to central nuclear reactions. A truncation of the far off-diagonal elements of the spatial density matrix is implemented, resulting in speedup without affecting the evolution of the system close to the diagonal. The technique is applied to a simulation of collisions between quasi-1D Bose-Einstein condensates, using a modified Gross-Pitaevskii equation that allows inclusion of some transverse degrees of freedom in a one dimensional environment.

¹This work was supported in part by US National Science Foundation Grant No. PHY-0800026.

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Date submitted: 30 Jun 2011

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