

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

A GPU-assisted Semiclassical Study of Few-Body Systems with Fractional Statistics CHESTER CHU, Massachusetts Institute of Technology, Harvard University, ERIC HELLER, Harvard University, TOBIAS KRAMER, Humboldt Universität zu Berlin — In two spatial dimensions, quantum mechanical particles can be anyons that have fractional exchange statistics that lies between bosons and fermions. The energies and eigenstates of the few-body problems for anyons is solvable analytically only for some limited cases. In this study, we present a novel approach for obtaining the energies and eigenstates for general few-particle anyonic systems based on the semiclassical initial value representation method. We also demonstrate how GPU computing can be implemented for the semiclassical wave packet simulations.

Chester Chu
Massachusetts Institute of Technology, Harvard University

Date submitted: 15 Nov 2013

Electronic form version 1.4