

Abstract Submitted
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Heavy-Ion Scattering using the PIQTr Model¹ ZACHARY TEMPLE, TORREY SAXTON, ALLISON HARRIS, Illinois State Univ — Heavy-ion charged particle collisions have important applications in fields such as astrophysics, biophysics, and plasma physics, and from a fundamental standpoint, provide valuable information about the few-body problem. Current theoretical atomic collision models work well for electron projectiles, but heavy-ion projectiles continue to present a challenge for even the most advanced models. To help address these challenges, we developed the Path Integral Quantum Trajectory (PIQTr) model for the calculation of time-dependent wave functions. The method has been applied to particles moving in one dimension and was shown to work well for heavy particles. We have now extended our method to charged particles moving in two dimensions and present time-dependent numerical results for heavy-ion scattering.

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