

Abstract Submitted  
for the TSS09 Meeting of  
The American Physical Society

**Using the Feynman-Kac Path Integral Method in Computing Eigenvalues and Matrix Elements for the Infinite Square Well with a Negative Delta Potential** JAMES M. REJCEK, NAIL G. FAZLEEV, University of Texas at Arlington — The exact analytical solution of the Feynman-Kac path integral for the Infinite Square Well with a negative value delta function potential at the origin is presented and compared with numerical calculations approximated by random walk simulations on a discrete grid. In addition, a method using parity symmetry on the matrix element is presented that allows higher order eigenstates to be computed. The method provides exact values in the limit of infinitesimal step size and infinite time for the lowest eigenstates.

Nail Fazleev  
University of Texas at Arlington

Date submitted: 31 Mar 2009

Electronic form version 1.4