Follow-on Studies of Hydrogenic Quantum Systems Using the Feynman-Kac Path Integral Method J.M. REJCEK, N.G. FAZLEEV, Department of Physics, University of Texas at Arlington — The Feynman-Kac path integral method is applied to the atomic hydrogen quantum system for the purpose of evaluating eigenvalues of the corresponding eigenfunctions of the Hamiltonian of the system. These are computed by random walk simulations on a discrete grid. The study provides the latest simulation analysis and includes rescaling and the use of symmetry that allows eigenvalues of the corresponding 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.

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