

Abstract Submitted
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Double Photoionization of H₂: Double Slit Interference?¹ DANIEL HORNER, Los Alamos National Laboratory, SHUNGO MIYABE, University of California, Davis, FELIPE MORALES, FERNANDO MARTIN, Universidad Autonoma de Madrid, Spain, THOMAS RESCIGNO, Lawrence Berkeley National Lab, C. WILLIAM MCCURDY, Lawrence Berkeley National Lab and University of California, Davis — Using the method of exterior complex scaling and the finite element discrete variable representation, we are able to compute accurate time-independent wave functions for the double photoionization of H₂. Together with integral amplitude methods, these accurate wave function solutions allow us to calculate converged differential cross sections. We present the double differential cross section at photon energies between 130 eV and 240 eV. At these energies, recent experiments have observed angular distributions that were interpreted as double slit interference of the electrons ejected from near the two nuclei. With our theoretical methods, we are able to examine this question further and will offer an alternate interpretation based on the coherent mixture of parallel and perpendicular polarization in the circularly polarized light.

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