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Ionization dynamics for electron impact ionization of H₂O¹ JUNFANG GAO, DON MADISON, Department of Physics, University of Missouri-Rolla, MO 65409 USA, MARTYN HUSSEY, ANDREW MURRAY, Schuster Laboratory, School of Physics and Astronomy, The University of Manchester, Manchester M13 9PL, UK, DEPARTMENT OF PHYSICS, UNIVERSITY OF MISSOURI-ROLLA COLLABORATION, SCHUSTER LABORATORY, SCHOOL OF PHYSICS AND ASTRONOMY, THE UNIVERSITY OF MANCHESTER COLLABORATION — Water is arguably the most important substance in the universe. Recently (e, 2e) spectroscopy has been used to study low to intermediate incident energy (e.g. below 107.6eV) fully differential cross sections for electron impact ionization of water. These low energy results are very sensitive to the collision dynamics, so accurate theories are in the needed to interpret the experimental data. The distorted wave impulse approximation (DWIA) and molecular three-body distorted wave (M3DW) approximation were recently introduced by our group. These approximations will be used to study the fully differential cross sections for low energy electron-impact ionization of H₂O molecules. The importance of the polarization potential will be examined. Our theoretical results will be compared with recent experimental measurements.

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