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Multicenter distorted wave approach for electron-impact ionization of molecules.[1] DON MADISON, ESAM ALI, Missouri Univ of Sci Tech, CHUANGANG NING, Department of Physics and State Key Laboratory of Low-Dimensional Quantum Physics, Tsinghua University, Beijing, People's Republic of China — In the M3DW (molecular 3-body distorted wave) approach that we have been using for examining electron-impact ionization of molecules, the continuum wavefunctions are calculated using a spherically symmetric distorting potential and consequently do not depend on the orientation of the molecule. Here we report a new version of this approach for which the distorted waves depend not only on the orientation of the molecule but also on the exact location of each nuclei. To test this new model, we compare our theoretical results with experimental cross sections measured by Alexander Dorn's group for 54 eV electron-impact ionization of aligned H2 in the perpendicular plane [*Phys. Rev. Lett.* 109 123202, (2012)].

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