

Abstract Submitted
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Using the Time-dependent Floquet Method to Study Below-threshold Dissociation and Zero-photon Dissociation¹ JIANJUN HUA, BRETT ESRY, J.R. Macdonald Laboratory, Department of Physics, Kansas State University — Below-threshold dissociation (BTD) and zero-photon dissociation (ZPD) are two important nonadiabatic phenomena occurring during molecular dissociation in an ultrashort intense laser field. BTD is a single-photon dissociation mechanism initiated by a photon carrying less energy than the minimum required for the dissociation to occur. Zero-photon dissociation (ZPD) is a special case of BTD, occurring when the net number of photons absorbed is zero. We have employed the time-dependent Floquet method to investigate BTD and ZPD. We found that the vibrational states whose energy lies in the vicinity of one-photon and three-photon crossings make major contributions to BTD and ZPD.

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