

Abstract Submitted
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Photodissociation and Photoionization of Propanaldehyde at 355nm. Theory and experiment.¹ CARMEN CISNEROS, LEONARDO MUÑOZ-RUGELES, ALFONSO GUERRERO, IGNACIO ALVAREZ, Instituto de Ciencias Físicas UNAM — Propanaldehyde is a large component in the atmosphere, finding in concentrations around $1-2 \times 10^{10}$ molecules/cm³, motivating the characterization of photodissociation and photoionization dynamics by UV multiphoton absorption. In this work we present the study of photodissociation and photoionization dynamics by multiphoton absorption with 355nm wavelength photons, using time of flight spectrometry in reflectron mode, R-TOF, and calculations of potential energy surfaces for the principal reaction coordinate using time dependent density functional theory, TD-DFT. The experimental and theoretical results suggest that the characteristics observed in the R-TOF spectra come from the generation of free radicals, by two photon absorption, that later are ionized by multiphoton absorption.

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