

Abstract Submitted
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Contribution of Autoionization Process on the Double Ionization Fragmentation Channel of Carbon Dioxide Molecule WAEL ISKANDAR, AVERELL GATTON, BISHWANATH GAIRE, ELIO CHAMPENOIS, KIRK LARSEN, NIRANJAN SHIVARAM, Lawrence Berkeley National Laboratory, TRAVIS SEVERT, Kansas State University, ALI MORADMAND, Auburn University, JOSHUA WILLIAMS, University of Nevada, DANIEL SLAUGHTER, THORSTEN WEBER, Lawrence Berkeley National Laboratory — We have studied the auto-ionization process happened in CO_2 molecule using photon energy below and above the double ionization threshold and a COLTRIMS setup. By populating an excited state of CO_2^+ , transition may occur at the crossing point with CO_2^{2+} leading to dissociation into $\text{CO}^+ + \text{O}^+$. By measuring in coincidence the kinetic energy release of the two ionic fragments and the energy of the two electrons detected, we are able to determine the internuclear distance at which the transition point between the intermediate state CO_2^{+*} and the final state CO_2^{2+} occurs. Preliminary results show very large internuclear distance at the transition point and that this latter auto-ionization may occurs at one order of magnitude larger than the (CO-O) equilibrium distance.

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