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**Production of Low Energy Electrons in a Small Molecular Environment**[1] F.P. STURM, B. GAIRE, I. BOCHAROVA, P. BRAUN, A. BELKACEM, TH. WEBER, Lawrence Berkeley National Laboratory, W. CAO, I. BEN-ITZHAK, Kansas State University, J.B. WILLIAMS, A. LANDERS, Auburn University, R. DOERNER, Goethe Universitaet Frankfurt — Low energy electrons contribute significantly to radiation damage in biological matter by ionizing neighboring molecules and inducing DNA strand breaking. However, little is known about the correlated generation of electrons and the mechanisms of the subsequent electron-initiated processes in molecular environments or clusters at a microscopic level. Applying a 3d momentum imaging technique (COLTRIMS), we have investigated the single-photon double ionization of oxygen dimers in order to single out and distinguish between different and important radiationless mechanisms (ICD and TS1). Their evolution is studied as a function of the energy of the incident photon. Differential energy and angular distributions help to understand the contributions of these competing mechanisms.

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