Abstract Submitted
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Ultrafast Energy Transfer between Oxygen Molecules[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, M. HONIG, J.B. WILLIAMS, A. LANDERS, Auburn University, R. DÖRNER, Goethe Universitaet Frankfurt — Photo ionization of atoms or molecules just above the double ionization threshold often leaves the cation in an excited state. The excess energy is mainly released by autoionization or radiative decay. For dimers Cederbaum *et al.* have predicted a third process for relaxation. Here, the excited atomic or molecular target transfers the energy in form of a virtual photon to its neighboring partner, which emits an electron subsequently. The remaining doubly charged dimer then undergoes a Coulomb explosion. The effect is known as Interatomic Coulombic Decay (ICD) and has been observed for a variety of atoms so far. Only recently it was found to take place in water molecules as well. We report on the experimental study of this ultrafast energy transfer process in oxygen dimers.

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