

Abstract Submitted  
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**Study of D<sub>2</sub> and H<sub>2</sub> nuclear dynamics in strong laser field using Coulomb Explosion Imaging** IRINA BOCHAROVA, IGOR LITVINYUK, LEWIS COCKE, DIPANWITA RAY, CHAKRA MAHARJAN, PREDRAG RANITOVIC, Kansas State University — For small molecules like H<sub>2</sub> and D<sub>2</sub> most of the nuclear wavepacket motion is expected to occur on femtosecond time scale. To probe such a fast dynamics Coulomb explosion imaging is used in combination with short (8 fs) pulses and pump-probe technique. We use COLTRIMS technique to collect fragments of Coulomb explosion of molecules in coincidence and calculate kinetic energy release of these fragments as well as molecular orientation before the explosion as a function of time. It allows us to track vibration and rotational nuclear wavepackets and follow the dissociation process of hydrogen and deuterium molecules.

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