

Abstract Submitted  
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**Probing Fast Dynamics in N<sub>2</sub> and H<sub>2</sub> molecules in strong laser field with ultra-short pulses** IRINA BOCHAROVA, CHAKRA MAHARJAN, ALI ALNASER, DIPANWITA RAY, LEWIS COCKE, IGOR LITVINYUK, Kansas State University — We used pump-probe technique with few-cycle pulses and COLTRIMS detection to study dynamics of ionization and dissociation of molecules following ionization/excitation by a strong field of ultra-short laser pulse. We detected in coincidence pairs of H<sup>+</sup> ions and single and multiple charged ions of nitrogen N<sup>q+</sup> produced by pump and probe pulses in ionization and dissociation processes. Setting the delay between the two pulses we measured the kinetic energy release dependence on the delay time, which vibrational and dissociative dynamics. We were able to follow the contribution of each separate channel to the total ions yield at each delay.

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