

Abstract Submitted  
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**A semi-quantitative model for molecular dissociation in an intense laser pulse**<sup>1</sup> B.D. ESRY, I. BEN-ITZHAK, P.Q. WANG, A.M. SAYLER, K.D. CARNES, J.R. Macdonald Laboratory and Department of Physics, Kansas State University — We have developed a simple model that describes the intensity and angular dependence of molecular dissociation and predicts the kinetic energy of the fragments. Moreover, the model yields relatively simple analytic expressions for each of these dependencies that makes possible semi-quantitative estimates for the mechanisms of bond-softening and bond-hardening. The predictions of the model are in general agreement with our measurements for net one, two, and three photon dissociation of  $\text{H}_2^+$  in a 45 fs pulse.

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