Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Effects of electron heating on femtosecond laser-induced coherent acoustic phonons JINCHENG WANG, CHUNLEI GUO, University of Rochester — In this work, we employ a surface plasmon technique to resolve the dynamics of femtosecond laser-induced coherent acoustic phonons in noble metals. Clear acoustic oscillations are observed in our experiments. We further find that the initial phase decreases linearly with pump fluence. Our model calculations show that the hot electrons instantaneously excited by femtosecond pulses contributes to the generation of coherent acoustic phonons in metals.

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Date submitted: 06 Dec 2007 Electronic form version 1.4