

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Laser-induced phonon-phonon interaction in bismuth MARTIN GARCIA, EEUWE ZIJLSTRA, Physics Department, Universität Kassel — We demonstrate that the coupling between laser-induced coherent phonons in bismuth leads to the appearance of mixing signals in the isotropic reflectivity. As a consequence modes that cannot usually be detected by means of the isotropic reflectivity show up. We further demonstrate that this interaction is strongly dependent on the laser fluence and is for that reason only observable when sufficiently intense laser pulses are used. In addition, we demonstrate that the coupling between phonons of the same symmetry leads to the appearance of higher harmonics in the isotropic reflectivity.

Martin Garcia
Physics Department, Universität Kassel

Date submitted: 15 Nov 2006

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