

Abstract Submitted  
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**Electronic Raman scattering in Bi-based superconductors under pressure**<sup>1</sup> XIAOJIA CHEN, VIKTOR V. STRUZHKIN, ALEXANDER F. GONCHAROV, RUSSELL J. HEMLEY, HO-KWANG MAO, Geophysical Laboratory, Carnegie Institution of Washington, Washington, DC 20015, U.S.A., CHENGTIAN LIN, Max-Planck-Institut für Festkörperforschung, D-70569 Stuttgart, Germany, JIAN-XIN ZHU, Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, U.S.A. — Determining the nature of interaction responsible for the Cooper-pair formation in cuprates remains unsettled. The most probable candidates are lattice vibrations (phonons) and spin fluctuation modes. Recently, it has been argued that Raman scattering in  $B_{1g}$  symmetry may serve as a probe to distinguish between phonon-mediated and magnetically mediated  $d$ -wave superconductivity. Here we report the results of electronic Raman scattering measurements in Bi-based bilayer and trilayer superconductors at high pressures and at temperatures around 12 K. As a clean and effective tool, pressure enhances  $T_c$  and thus increases the pairing interaction in these materials. Meanwhile, we find that pressure also brings about the change of the  $B_{1g}$  mode. The observed evolution of  $B_{1g}$  modes with pressure sheds important insight on the pairing mechanism of high- $T_c$  superconductivity.

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