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Magneto-phonon resonance of shear modes of bilayer graphene KOSTYANTYN KECHEDZHI, Department of Physics and Astronomy, Rutgers The State University of New Jersey, 136 frelinghuysen rd, Piscataway, 08854 NJ, USA, MARK OLIVIER GOERBIG, JEAN-NOEL FUCHS, Laboratorie de Physique des Solides, Universite Parsi-Sud, CNRS UMR 8502, F-91405 Orsay, France, VLADIMIR FAL'KO, Department of Physics, Lancaster University, Lancaster, LA1 4YB, UK — We describe the frequency renormalization of the recently observed shear phonon mode of bilayer graphene due to electron-phonon coupling. In presence of a relatively strong magnetic field resonances with electronic inter-Landau level transitions are possible. When the resonance condition is staisfied a fine structure of the Raman line corresponding to the shear mode arises which is linear in electron-phonon coupling constant. This effect can be used to measure the strength of the electron-phonon coupling for the shear mode.

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