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Magneto-Raman experiments in single- and multi-layer graphene F.M. ARDITO, UNICAMP - Univ. Estadual de Campinas, T.G. MENDES DE SA, UFMG - Univ. Federal de Minas Gerais, P.F. GOMES, UNICAMP - Univ. Estadual de Campinas, E. NERY, D.L. MAFRA, UFMG - Univ. Federal de Minas Gerais, F. IIKAWA, M.J.S.P. BRASIL, UNICAMP - Univ. Estadual de Campinas, L.M. MALARD, F. PLENTZ, M.A. PIMENTA, R.G. LACERDA, UFMG - Univ. Federal de Minas Gerais, E. GRANADO, UNICAMP - Univ. Estadual de Campinas — Micro-Raman experiments as a function of magnetic field up to 15 T were performed on a set of natural graphene flakes on Si/SiO₂ substrates and multilayer epitaxial graphene grown on a carbon face of SiC. Pronounced oscillations of the Gband position and linewidth attributed to crossings of this mode with Landau levels were observed in epitaxial graphene. Calculated phonon energy and broadening oscillations obtained from the phonon's Green function show good agreement with the results obtained for SiC samples, in line with a previous report [1]. For graphene flakes, the field evolution of the G-band is strongly sample-dependent, and may also depend on the position of the focal spot. A splitting of G-band in two peaks was observed in some cases for B > 12 T. Our results suggest the large sensitivity of graphene electron-phonon interaction to both magnetic field and local conditions. [1] C. Faugeras et al., Phys. Rev. Lett. **103**, 186803 (2009).

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