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Raman spectroscopy of multiferroic trigonal boracite $Co_3B_7O_{13}Cl$[1] MILKO ILIEV, VIKTOR HADJIEV, Texas center for Superconductivity at the University of Houston, MARIA-EUGENIA MENDOZA, Instituto de Física, Universidad Autònoma de Puebla, Puebla, Mexico, JORDI PASCUAL, Institut Català de Nanotecnologia (ICN) and Departament de Física, Universitat Autònoma de Barcelona, Barcelona, Spain — Raman microscopy was applied to study the polarized Raman scattering from untwinned domains of $Co_3B_7O_{13}Cl$ (Co-Cl) in the trigonal, $R3c$, ferroelectric phase. The symmetry (A_1 or E) and mode polarization (LO or TO) for all observed Raman lines were determined from comparison of the spectra measured in several scattering configurations. It was found that as a rule the TO-LO splitting is small or negligible. A group of A_1 modes, characterized by a quasi-one-component Raman tensor, was tentatively assigned to stretching vibrations of Cl, O, or B along the trigonal axis, which in this material is parallel to the ferroelectric polarization direction.

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