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Acoustic properties of TaCl - TaBr mixed crystals

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Attenuation coefficient and phase velocity of transversal and longitudinal acoustic waves in TaCl - TaBr mixed crystals have been investigated by Bragg light diffraction on the acoustic waves. The measurements were carried out at the frequencies from 200 to 1200 MHz at home temperature. Moreover, the phase velocity was determined by using Raman-Nath diffraction and optical heterodyning at 10 MHz. The investigations shown, that the change of acoustic properties in the investigated mixed crystals is nonadditive. Nonlinear interaction constants have been calculated taking into consideration various factors, which can influence on the propagation of acoustic waves in mixed crystals. The results were compared with similar investigations in NaCl - NaBr mixed crystals.