

Abstract Submitted
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Influence of Hydrostatic Pressure on Magnetoacoustic Properties of Sr_2RuO_4 .¹ O. SVITELSKIY, S. HEADLEY, S. TOZER, E. PALM, T. MURPHY, A. SUSLOV, National High Magnetic Field Laboratory, Tallahassee, FL 32310, D. SHULYATEV, Moscow State Institute of Steel and Alloys, Russia 119049 — The interest in the nanolayered Sr_2RuO_4 crystal is due to its unconventional spin-triplet superconductivity. We used ultrasonic pulse-echo technique to obtain further insight into its electronic structure. We investigated longitudinal 30-300 MHz sound wave propagating in [100] direction of the single crystal Sr_2RuO_4 , grown by floating zone technique, at temperatures down to 300 mK, in magnetic fields up to 18 Tesla, and under hydrostatic pressures up to 7.3 kbar. The decent quality of the material was confirmed by the T_c value of 1.25 K. Under the hydrostatic pressure, T_c and H_{c2} decreased, the superconducting transition width increased, and the sound speed increased. Data analysis allowed us to separate electron and phonon contributions in the sound attenuation.

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