

Abstract Submitted
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Determination of Longitudinal and Bulk Sound Velocities in Natural Uranium under Shock-wave Loading STANISLAV FINYUSHIN, ALEXEY FEDOROV, ANATOLIY MIKHAILOV, DMITRIY NAZAROV, TATIANA GOVORUNOVA, DENIS KALASHNIKOV, EVGENIY MIKHAILOV, VADIM KNYAZEV — We carried out the experiments on determination of longitudinal and bulk sound velocities in natural uranium in the range of pressures 40-72 GPa using laser interferometer Fabry-Perot. From the registered particle velocities profiles of contact boundary U-LiF the following parameters of elastic-plastic wave were defined: amplitude of elastic release wave 5.3-6.8 GPa, value of Poisson ratio 0.34-0.40, yield strength 0.96-1.36 GPa. It is shown, that influence of internal material structure is the cause of complex elastic-plastic behavior of natural uranium.

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