Abstract Submitted
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Shock compressibility of C_{70} fullerite at the pressure range 6 - 9 GPa[1] VLADIMIR MILYAVSKIY, JIHT of RAS, KONSTANTIN TEN, LIH SB RAS, TATIANA BORODINA, JIHT of RAS, LEONID LUKIANCHIKOV, EDUARD PRUUEL, LIH SB RAS, BORIS TOLOCHKO, ISSCM SB RAS, VLADIMIR ZHULANOV, INP SB RAS — Shock compressibility of C_{70} fullerite was measured with the use of pulsed-periodical source of synchrotron radiation of the Institute of Nuclear Physics SB RAS. The starting C_{70} specimens were prepared by high (1 GPa) hydrostatic pressure treatment and had a density of 1.65 g/cc, a diameter of 15 mm and a thickness of 2.5-3.5 mm. Specimens were loaded by impacts of metal plates (with a diameter of 16 mm) accelerated by high explosives. Synchrotron radiation technique was used to measure the parameters of the shock-compressed fullerite. This method of measurements is based on immediate visualization of X-T diagram of shock-wave processes by measuring a degree of attenuation of synchrotron radiation by an explored material during passage of a shock wave through this material. It was obtained that the experimental Hugoniot of C_{70} fullerite in the explored pressure range (6.3-9.3 GPa) is allocated below the experimental Hugoniot of C_{60} fullerite [V.V. Milyavskiy et al. Diamond and Rel. Mat. 14 (2005) 1920] on pressure - specific volume plane.

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