

Cylindrical compression of argon in a model setup

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The paper presents the results of experimental study that was carried out using a laboratory model installation for cylindrical compression. Argon was chosen as the object under study. The laboratory setup was developed at IPCP RAS. Its operation is based on the principle of cylindrical compression of a cell with the test substance (argon) by the detonation products of a converging detonation wave, which was formed by the method of multipoint initiation. The results of high-speed photography of detonation wave evolution processes and visualization of the formation of a converging shock wave in argon are presented. Pyrometric and probe measurements were carried out. The results of high-speed shooting of cylindrical compression of a copper cell with argon in the slit mode were obtained. Using a pyrometer with a high temporal resolution, temperature estimates were obtained from three wavelengths on the axis of the cell under axisymmetric compression of argon.