

Model of destruction of metals (lead, tin) in solid and liquid phases under the influence of shock waves of various intensities

Ignatova O.N.^{1,®}

¹ Federal State Unitary Enterprise “Russian Federal Nuclear Center—All-Russian Research Institute of Experimental Physics, Mira Avenue 37, Sarov, Nizhniy Novgorod Region, 607188, Russia

® onignatova@gmail.com

This report presents the results of computational studies of the destruction process of lead and tin in their solid and liquid phases under the influence of strong non-stationary waves. The calculations were performed using a one-dimensional Lagrangian method with a self-consistent system of constitutive relations that takes into account compression, plastic deformation, fracture, and compaction of damaged materials (SCR RING-DRK-L) [1]. The features of the formation of the density distribution of matter are shown.

- [1] Ignatova O N *et al.* 2020 Unified constitutive relations of deformation, fracture and damage compaction in lead *Proceedings of the 35th International Conference “Equations of State of Matter”* (Elbrus, Russia)