

Abstract Submitted
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Compaction model of damaged medium IGNATOVA OLGA, RAEVSKIY VIKTOR, Retired, TSELIKOV IGOR', None — At the present time difficulties emerge in the course of numerical simulation of high-rate strain of materials, accompanied by damage and compaction of defects (pores) under the action of compression waves. Compaction of defects formed by the action of pulsed tensile stresses is studied not sufficiently presently, and simplified mathematical models are used in calculations. The available compaction models are too complicated for their use in numerical procedures or they do not show all phenomena occurring at closing pores. A compaction model of a damaged medium is proposed in the present paper, which was based on the description of collapse of a single pore by taking into account elastic-plastic properties of a medium. To describe convergence of pores distributed with substance volume, a motion of one spherical cell was considered in an ideal-plastic incompressible medium. The analytical solution was obtained for the dependence of integral damage on pressure, shear strength and initial damage in this approximation. The equations were derived describing kinetics of compaction for the case of arbitrary pressure dependence on time and variable yield strength.

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None

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