

Abstract Submitted  
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**Probabilistic Approach to Numerical Simulation of Fracture**

ALEXANDER GERASIMOV, Tomsk State University — The natural heterogeneity of real materials structure influencing on distribution of material physicomaterial characteristics (PMC) is one of the factors determining character of destruction. The introduction of the given factor in the equations of mechanics of a deformable solid is possible at use probabilistic laws of distribution PMC on volume of a considered design. There are problems where the fragmentation is mainly probabilistic process: explosive destruction axisymmetric shells where character of blasting fragmentation are beforehand unknown. Determining influence of heterogeneity of material structure is shown as well in problems punching thin barrier. In order that simulated process of a fragmentation reflected a real picture of behavior of the destroyed bodies, it is necessary to bring in casual distribution of initial deviations strength properties from rating value to PMC of a body. In work the explosive fragmentation of the shells, a fragmentation of a barrier and an shell after barrier piercing, punching thin barrier on a normal and under an angle, crushing of metal rings, process of high-speed impact of the laminated - spaced barrier with the steel spheres is considered.

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