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Modeling of constructional elements fragmentation:3-D statement and probabilistic approach ALEXANDER GERASIMOV, SERGEY PASHKOV, Tomsk State University — The heterogeneity of real materials structure influencing on distribution of material characteristics is one of the factors determining a destruction character. The introduction of the given factor in the equations of mechanics of deformed solid is possible at the use of probabilistic laws of characteristics distribution in the volume of a considered design. The explosive fragmentation of the open and closed shells, thick plate punching by HE charged shell on a normal and at an angle, plate and a shell fragmentation after plate piercing and under HE charge explosion, thin barrier punching on a normal and at an angle, crushing of metal rings dressed on a copper tube, process of high-speed impact of laminated-spaced metallic plates with steel spheres modeling debris of space bodies and artificial objects are considered. The processes are calculated in view of material heterogeneity. To calculate elastoplastic flows and detonation products we used the technique realized on tetrahedral cells and based on Wilkins method for calculation of internal points of a body and on Johnson method for calculation of contact interactions.

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