

Abstract Submitted
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Estimation of spectral characteristics of particles ejected from free surfaces of metals and liquids under shock wave effect¹ ALLA GEORGIEVSKAYA, VICTOR RAEVSKY, RFNC-VNIIEF — One of the mechanisms for shock-wave dispersion of materials is ejection of particles from free surface after shock wave arrival to it. In many cases, the initial perturbations are roughness obtained by turning processing. Basing on general physical knowledge and the Richtmyer analytical solution, approximated equations were obtained for estimation of quantity of mass ejected from surface versus time for small initial perturbations. Numerical calculations confirmed correctness of the estimations. Authors of the work present approximated equations for estimation of spectral characteristics of particles ejected from substance surface under effect of shock wave in the liquid and solid states. The calculated spectra of particles are compared to results of tests performed in VNIIEF for determination of spectral structure of formed particles. Pressure and surface roughness were varied in these tests. At the qualitative level, the particle spectra calculated by the suggested model are in agreement with the experimental results.

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