

Abstract Submitted
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Analysis on the spall damage in ductile materials under dynamic loading¹ FENGGUO ZHANG, HONGQIANG ZHOU, JIANLI SHAO, GUANG-CAI ZHANG, TAO HONG, Institute of Applied Physics and Computational Mathematics — A statistical model of dynamic damage by void nucleation, growth is proposed for ductile materials sustaining intense loading. The model accounts for the early growth of void and their interaction. The computer simulations of spall experiments for copper, based on the proposed model, are performed with the finite element method. The computed results for free surface velocity profile and void concentrations through the thickness is in good agreement with experimental data. The early growth of voids and the correlation of the damage evolution and the stress history near the spall plane are analyzed, Besides, the contributions of different size voids to porosity are explored.

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