Calculation hierarchy model of dynamic metals failure process

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In dynamic metals failure phenomenon the developing dissipative structures have a fractal nature on different time-scale levels resisted to external action [1, 2]. There have been specified time-temperature regularities of the dynamic failure process of a number of metals and a dynamic invariant $I(E_{cr})$. The dynamic invariant has close values for all studied metals. The time dependence of centers formation rate has an exponential form $J(t) \sim (t - t_p)^{-\gamma}$, t_p - longevity. Functional correlations for I, J were input for 2D mathematical calculation codes, what allowed description of experiences on action of pulses of relativistic electron beams to the thin foils of a number of metals.

References

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