

# Modelling of spall fracture at high-velocity collision of metal plates

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Spall fracture at shock wave reflection from a free surface is one of fundamental processes limiting the dynamic strength of metals. Increase in strain rate considerably influence this process and increases the spall strength [1]; therefore, kinetics-based approaches are most suitable for its description at continuum modelling. The multiscale kinetic model of dynamic tensile fracture [2, 3] is parameterized using MD data and implemented within 1D finite-difference code. The modelling results are presented in comparison with the experimental data from the literature. The work is supported by the Russian Science Foundation (Project No. 20-79-10229).

[1] Kanel G I, Zaretsky E B, Razorenov S V and Fortov V E 2017 *Phys.–Usp.* **60** 490–508

[2] Mayer A E and Mayer P N 2019 *Int. J. Mech. Sci.* **157–158** 816–832

[3] Mayer A E and Mayer P N 2020 *Int. J. Fract.* **222** 171–195