

# Atomistic simulations on the fragmentation of metals under various decaying shocks

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## **Abstract**

Using MD simulations, we simulated the failure modes of metals under decaying shock loading. For the case before melting, we observe the clear fracture with a spall layer formed as expected. For the case after melting, we observe large area cavitation and fragmentation. The failure depth is obtained, whose variation law is related to the various loading profiles. Also, we also found that the spall strength keeps a linear reduction with the spall temperature before melting, and this reduction tendency weakens after melting.

**Keywords:** MD, fragmentation, shock