Abstract Submitted
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Ballistic behavior of anisotropic metals JEFFREY LLOYD, US Army Research Laboratory — Finite element simulations are used to understand the localization, damage, and failure behavior that occurs during ballistic penetration. Spherical projectiles are launched at low to intermediate velocities against metal targets that possess pronounced anisotropy. Because much of our current understanding of ballistic behavior is rooted in the assumption that metals are well-described by isotropic strength and failure relations, special attention is given to highlight how a material's anisotropy causes its ballistic response to deviate from the idealized isotropic description. Where possible, comparisons are made with spatio-temporal velocity measurements of back-face deformation, as well as with post-mortem features observed in intact and failed targets.

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