

Abstract Submitted
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Plasticity and Multimode Damage in Depleted Uranium¹ DAR-
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National Laboratory — Recent damage studies on depleted uranium samples have
revealed that the brittle type cracking typically observed in insipiently spalled de-
pleted uranium samples contains a high level of plasticity as well. Experimental
gas gun shock recovery results will be presented along with metallography from the
recovered materials. Under dynamic tensile loading the nucleation and propagation
of cracking is captured in the insipient state. Serial metallographic sectioning is
performed and EBSD is used to observe the recovered state of the depleted uranium
samples. Cracks appear to propagate in a mixed brittle and ductile mode. However,
crack tips are shown to link up through regions of extremely localized plastic flow
in the uni-axial loading direction.

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