

Abstract Submitted
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Investigation of Release in Shocked Fibre-Textured Polycrystalline Tantalum by Use of X-Ray Diffraction M. SLIWA, D. MCGONEGLE, University of Oxford, UK, C. WEHREBERG, A. JENEI, H.S. PARK, R.E. RUDD, L. ZEPEDA-RUIZ, B.A. REMINGTON, LLNL, A. HIGGINBOTHAM, University of York, UK, C. BOLME, LANL, B. NAGLER, H.-J. LEE, F. TAVELLA, LCLS, SLAC, J.S. WARK, University of Oxford, UK — While *in situ* diffraction has proved extremely useful in studying dynamic compression, there have been relatively few experiments investigating shocked materials on release. We extend our previous work on plasticity mechanisms in shock compressed fibre-textured tantalum to study lattice rotation on release. By exploiting the extremely bright femtosecond X-ray pulses available on the MEC beamline at LCLS, we are able to characterise release wave-profiles by use of diffraction measurements, and compare these results with molecular dynamics simulations.

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