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Dynamic Response of Copper Subjected to Quasi-Isentropic, Gas-Gun Driven Loading HUSSAM JARMAKANI, UCSD, JAMES MC-NANEY, LLNL, MATHEW SCHNEIDER, UCSD, D. ORLIKOWSKI, LLNL, J.H. NGUYEN, BIMAL KAD, MARC MEYERS, UCSD, UCSD TEAM, LLNL COL-LABORATION — A transmission electron microscopy study of quasi-isentropic high-pressure loading of copper is being carried out. The dynamic response of both polycrystalline and single crystalline copper isentropically loaded to peak pressures between 18GPa and 52GPa is being investigated. Deformation mechanisms and defect substructures at these different pressures are being analyzed. Current evidence suggests a deformation substructure consisting of heavily dislocated laths at the higher pressures and small and irregular dislocation cells accompanied by stacking faults at the lower pressures. This work was performed under the auspices of the U.S. Department of Energy by University of California, Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.

> Hussam Jarmakani UCSD

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