

Abstract Submitted  
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**Shock-induced collapse of nano-bubbles embedded in a solid matrix** E. BRINGA, LLNL, P. ERHART, 1Technische Universitt Darmstadt — Molecular-dynamics (MD) simulations of shocks interacting with He bubbles in embedded atom method Cu will be presented. At relatively low shock pressures the stress field of the bubble helps nucleating significant dislocation activity around it, with relatively small deformation of the bubble. At higher pressures the bubble shows compression along the shock direction. This compression reaches a value slightly above 50% before the solid matrix melts and the He dissolves in the liquid. Simulations using elliptical bubbles show some compression enhancement respect to the spherical bubble case, but no jetting was ever observed for the He pressures studied. The work at LLNL was performed under the auspices of the U. S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48

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