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Simulation and analysis of planar Kelvin-Helmholtz experiments on OMEGA KUMAR RAMAN, OMAR HURRICANE, HYE-SOOK PARK, BRUCE REMINGTON, HARRY ROBEY, VLADIMIR SMALYUK, Lawrence Livermore National Laboratory — A recent series of experiments on OMEGA provided the first observation of the Kelvin-Helmholtz (KH) instability in a high-energy-density physics context (E. C. Harding, et al., Phys. Rev. Lett., **103**, 045005, 2009; O. A. Hurricane, et al., Phys. Plasmas, **16**, 056305, 2009). In these experiments, a laser initiated blast wave deposits vorticity along a perturbed foam-plastic interface, which rolls up due to the KH instability. We present three-dimensional simulations that resolve some of the finer aspects of these experiments, including a possible origin of the low-density "bubbles" that appear in the x-ray radiographs at late times. We comment on previously reported discrepancies between the initial experiments and two-dimensional simulations, and also provide comparisons with more recent data (V. A. Smalyuk, et al., unpublished, 2011). This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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