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A design for a two vortex merger KH experiment on OMEGA-EP G. MALAMUD, Department of Aerospace, Oceanic and Space Sciences, University of Michigan, Ann Arbor, Michigan 48109, USA, A. SHIMONI, Department of Physics, Nuclear Research Center - Negev, 84190 Beer-Sheva, Israel, C.A. DI-STEFANO, Department of Aerospace, Oceanic and Space Sciences, University of Michigan, Ann Arbor, Michigan 48109, USA, Y. ELBAZ, Department of Physics, Nuclear Research Center - Negev, 84190 Beer-Sheva, Israel, C.C. KURANZ, P.A. KEITER, Department of Aerospace, Oceanic and Space Sciences, University of Michigan, Ann Arbor, Michigan 48109, USA, D. SHVARTS, Department of Physics, Nuclear Research Center - Negev, 84190 Beer-Sheva, Israel, R.P. DRAKE, Department of Aerospace, Oceanic and Space Sciences, University of Michigan, Ann Arbor, Michigan 48109, USA — The Kelvin-Helmholtz (KH) is of high importance in inertial confinement fusion (ICF) and super-nova. The two vortex merger KH evolution had not yet been studied experimentally, and is known only due to theoretical considerations [1]. We propose an experiment on Omega EP, capable of driving targets for several times larger than previous high-energy lasers [2]. The shear velocity upon the perturbed interface will be introduced by a steady shock wave in a target platform recently presented [3] and tested. The use of a steady shock, in oppose to past used blast wave system [2] in single mode experiments, allows a constant shear. The details of the experimental design are meant to provide a direct measurement of the perturbation evolution and vortices merging, validating KH models such as the statistical mechanics model [1].

[1] Rikanati et al. Phys. Fluids **15**,(2003); [2] Harding et al. PRL **103**(4), (2009); [3] Malamud et al., HEDLA 2012 proceedings.

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