Abstract Submitted for the DFD12 Meeting of The American Physical Society

Vortex Dynamics at Early Time Stages of Viscous Flow past a Finite Plate¹ LING XU, MONIKA NITSCHE, University of New Mexico — We use numerical simulations to revisit a fundamental problem of viscous flow past a finite flat plate. We resolved the boundary layer separation and roll-up from very early time to relatively large times. Details of vorticity structure in the boundary layer at early times are shown, these features have not been studied before. In particular, we will present details of the negative vorticity region, the entrainment between the positive and negative vorticity and the scales of circulation shedding rate from the plate tip, maximum velocity and core vorticity.

 $^{1}\mathrm{Xsede}$

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Date submitted: 26 Jul 2012

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