1077-35-2769 **John K Hunter*** (jkhunter@ucdavis.edu), Department of Mathematics, University of California at Davis, Davis, CA 95616, and **Mihaela Ifrim**, Department of Mathematics, University of California at Davis, Davis, CA 95616. *Enhanced Lifespan of Smooth Solutions of a Burgers-Hilbert Equation.*

We consider an initial value problem for an inviscid Burgers-Hilbert equation that models the motion of vorticity discontinuities in the two-dimensional flow of an inviscid, incompressible fluid. We use a normal form transformation, consisting of a near-identity transformation of the independent spatial variable, to remove the quadratic nonlinearity and prove the existence of small, smooth solutions on cubically nonlinear time-scales. For vorticity discontinuities, this result means that there is a cubically nonlinear time-scale before the onset of filamentation. (Received September 22, 2011)