

Abstract Submitted  
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**Targeted disruption of vortex rings**<sup>1</sup> ROBERT HANDLER, George Mason University, DAVID GOLDSTEIN, SAIKISHAN SURYANARAYANAN, University of Texas, Austin — Vortex rings at low to moderate Reynolds numbers are generated numerically by using an impulsive body force. For a Newtonian fluid, the vortex ring is observed to entrain a passive scalar, introduced at the generation point. This is expected according to standard vortex theorems. The fluid occupied by the scalar is then allowed to take on viscoelastic properties by using a targeting algorithm which employs a FENE-P model for the polymer stress evolution. The effects of such targeting on the evolution of the vortex ring will be discussed.

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