Shape evolution of a thin loop sedimenting in a viscous fluid
JAMES HANNA, CHRISTIAN SANTANGELO, Department of Physics, UMass-Amherst — We consider the non-local elastic problem of a closed thin filament settling under gravity in a fluid at zero Reynolds number. The filament is modeled as an inextensible chain, with no bending or twist rigidity. Although the equations admit rigid motions of the chain, there are no stable trajectories. We explore whether a stable envelope may exist around a recirculating blob and tail arrangement.

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