

Abstract Submitted
for the DFD13 Meeting of
The American Physical Society

The life of a vortex knot (in experiment)¹ DUSTIN KLECKNER, MARTIN SCHEELER, University of Chicago, DAVIDE PROMENT, University of East Anglia, WILLIAM T.M. IRVINE, University of Chicago — In recent experiments on linked and knotted vortices in classical fluids, we have found that they undergo a spontaneous change in topology: they untie themselves through a series of local reconnections. This outcome is at odds with the notion that fluid helicity (knottedness) should be conserved, as it should be for a dissipation-less fluid. Remarkably similar behavior is found for simulations of superfluid knots using the Gross-Pitaevskii equation. We will discuss our search for the missing helicity and the possibility of a universal driving mechanism for reconnections in topological vortices.

¹This work was supported by the National Science Foundation Materials Research and Engineering Centers (MRSEC) Program at the University of Chicago (DMR-0820054) and the Packard Foundation through a Packard fellowship.

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Date submitted: 02 Aug 2013

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