

Abstract Submitted
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Experimental characterization of Kelvin waves on quantized vortices following reconnection DAVID P. MEICHLE, University of Maryland, College Park, ENRICO FONDA, New York University - University of Maryland, College Park, NICHOLAS T. OUELLETTE, Yale University, DANIEL P. LATHROP, University of Maryland, College Park — The superfluid state of He4 exhibits reconnection of quantized vortices. Flow visualization is made possible by injecting a dilute mixture of seed gases (or atmosphere) which freeze into sub-micron tracer particles and decorate the vortex lines. Using this technique, we have for the first time directly observed the excitation of a self-similar traveling helical perturbation to a vortex core (Kelvin wave) following a reconnection of two vortices. Detailed analysis and comparison to several semi-classical theories of vortex waves will be presented, along with other recent visual observations in superfluid He flows.

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