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Quantized Superfluid Vortex Rings in the Unitary Fermi Gas MICHAEL FORBES, Washington State University, AUREL BULGAC, University of Washington, MICHELLE KELLEY, University of Illinois, KENNETH ROCHE, Pacific Northwest National Laboratory, University of Washington, GABRIEL WLA-ZOWSKI, Faculty of Physics, Warsaw University of Technology — In a recent article, Yefsah *et al.* [Nature **499**, 426 (2013)] report the observation of an unusual excitation in an elongated harmonically trapped unitary Fermi gas. After phase imprinting a domain wall, they observe oscillations almost an order of magnitude slower than predicted by any theory of domain walls which they interpret as a "heavy soliton" of inertial mass some 200 times larger than the free fermion mass or 50 times larger than expected for a domain wall. We present compelling evidence that this "soliton" is instead a quantized vortex ring by showing that the main aspects of the experiment can be naturally explained within the framework of time-dependent superfluid DFT.

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