

Abstract Submitted  
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**Observation of Flux Reversal in a Symmetric Optical Thermal Ratchet** SANG-HYUK LEE, KOSTA LADAVAC, MARCO POLIN, DAVID GRIER, Department of Physics and Center for Soft Matter Research, New York University, New York, NY 10003 — We demonstrate that a cycle of three holographic optical trapping patterns can implement a thermal ratchet for diffusing colloidal spheres, and that the ratchet-driven transport displays flux reversal as a function of the cycle frequency and the inter-trap separation. Unlike previously described ratchet models, the approach we describe involves three equivalent states, each of which is locally and globally spatially symmetric, with spatiotemporal symmetry being broken by the sequence of states.

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