Abstract Submitted
for the CUWIP21 Meeting of
The American Physical Society

Tetris artificial spin ice[1] AIKATERINI KARGIOTI, HILAL SAGLAM, Department of Applied Physics, Yale University, AYHAN DUZGUN, Theoretical Division and Center for Nonlinear Studies, Los Alamos National Laboratory, XIAOYU ZHANG, NICHOLAS S. BINGHAM, Department of Applied Physics, Yale University, YUYANG LAO, Department of Physics, University of Illinois at Urbana-Champaign, JOSEPH SKLENAR, Department of Physics and Astronomy, Wayne State University, IAN GILBERT, Department of Physics, University of Illinois at Urbana-Champaign Current affiliation: Seagate Research Group, Seagate Technology, CHRISTIANO NISOLI, Theoretical Division and Center for Nonlinear Studies, Los Alamos National Laboratory, PETER SCHIFFER, Department of Applied Physics, Yale University Department of Physics, Yale University — Artificial spin ice systems are composed of arrays of interacting nanomagnets, and they were originally designed to mimic the naturally occurring frustration in real spin ice materials. The original square ice geometry [1] can be altered to give rise to an array of vertex-frustrated geometries, such as Tetris [2] and Shakti [3], that allowed the study of new interesting physics phenomena. The Tetris ice structure is composed of alternating bands of staircase and backbone nanomagnets. We conducted PEEM-XMCD experiments at varying temperatures and evaluated the Tetris ice kinetics by analyzing the resulting flipping rates and vertex fractions. We showed, in accordance with previously reported data [2], that the backbone magnetic moments are more stable than the staircases. 1. Wang et al., Nature 439, 303 (2006) 2. Gilbert et al., Nat. Phys. 12, 162 (2016) 3. Lao et al., Nat. Phys. 14, 723 (2018)

[1]This work was primarily funded by the US Department of Energy, Office of Basic Energy Sciences, Materials Science and Engineering Division under Grant No. DE-SC0010778 and DE-SC0020162.

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Date submitted: 04 Jan 2021 Electronic form version 1.4