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Rachel A. Neville* (ranveille@math.arizona.edu), Department of Mathematics, University of Arizona, P.O. Box 210089, Tucson, AZ 85721. *Topological Techniques for Characterization of Pattern Forming Systems.*

Complex spatial-temporal patterns can be difficult to characterize quantitatively, especially similar patterns formed under different conditions. Persistent homology provides a meaningful low-dimensional quantitative summary of topological structure of dynamic data. These summaries retain a remarkable amount of information that allows for the investigation of the influence of nonlinear parameters, classification of data by parameters, and study of defect evolution. (Received September 22, 2018)