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Mustafa Hajj*, Ohio State University, Columbus, and **Bei Wang, Paul Rosen** and **Carlos Scheidegger**. *Visual Detection of Structural Changes in Time-Varying Graphs Using Persistent Homology*.

Topological data analysis is an emerging area in exploratory data analysis and data mining. Its main tool, persistent homology, has become a popular technique to study the structure of complex, high dimensional data. In this presentation we talk about using persistent homology to quantify structural changes in time-varying graphs. Specifically, we transform each instance of the time-varying graph into a metric space, extract topological features using persistent homology, and compare those features over time. We provide a visualization that assists in time-varying graph exploration and helps to identify patterns of behavior within the data. (Received December 04, 2018)