

# Workshop on Topology: Identifying Order in Complex Systems

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Linear Algebra over Cell Complexes: Applications to Data, Coding and Sensor Networks

**Series:** Workshop on Topology: Identifying order in complex systems

Justin Curry

University of Pennsylvania

**Date & Time:** Wed, 02/06/2013 - 17:00 - 18:00

**Location:** Proteomics Bldg. 120, Rutgers, The State University of New Jersey

In this talk we introduce a discrete and computable version of a mathematical technique known as sheaf theory. This tool provides a method for extracting qualitative topological features of data over a space, rather than of the space itself. We survey some applications to persistent homology, linear coding and optimization over graphs, and sensor networks where the sensors can sense properties sampled from a vector space. We show how to visualize the topology present in these systems through a generalized version of a barcode, but also provide a way for computing the topology without barcodes.

**Note:** &lt;a href="https://biomaps.rutgers.edu/page999directions.html"&gt;45747

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Tue, 01/29/2013 - 19:24

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terms:

- [School of Mathematics](#)