

LMS UNDERGRADUATE SUMMER SCHOOL

SWANSEA UNIVERSITY, 12–24 JULY 2020

COLLOQUIUM

Heather Harrington (Oxford)

Topological Data Analysis for Investigating Dynamics on and of Biological Networks

Abstract

Topological data analysis (TDA) allows one to examine features in data across multiple scales in a robust and mathematically principled manner, and it is being applied to an increasingly diverse set of applications. We investigate dynamics of biological networks, models and data using topological data analysis with concrete examples from contagions, neuroscience, and cancer. Time permitting, we will present preliminary results using TDA to analyse biological systems indexed by multiple parameters.