

MANY CHEERFUL FACTS

presents

A Short Introduction to Topological Persistence

a talk by Morgan Brown

12:10 – 13:00 on Wednesday, February 6, in room 1015.

The persistence algorithm, developed by Carlsson, de Silva, Edelsbrunner, Harer, Zomorodian, and others, gives a topological way of interpreting large datasets in n -dimensions, so that we can recognize important features without being distracted by noise. I will define persistence groups, and give an illustrative calculation to show how they are computed. I will also discuss an application to the analysis of natural image data.

*I am the very model of a modern Major General,
I've information vegetable, animal, and mineral,
I know the kings of England, and I quote the fights historical
From Marathon to Waterloo, in order categorical;
I'm very well acquainted, too, with matters mathematical,
I understand equations, both the simple and quadratical,
About binomial theorem I'm teeming with a lot o' news,
With many cheerful facts about the square of the hypotenuse!*

— Gilbert & Sullivan, $P \circ P$

The website for Many Cheerful Facts is
<http://www.math.berkeley.edu/~mcf/>