



PRESIDENTIAL DREAM COURSE
The UNIVERSITY of OKLAHOMA



MATH 4513 Capstone

The Mathematics of Data

Featuring: Dr. Konstantin Mishaikow

530pm April 5, 2022

Physical Sciences Center, Room 201

Open to the public

We have Data and Computers,
why do we need Math?

With today's technology, we can collect massive high-dimensional sets of data from experiments and generate massive high-dimensional sets of data numerically, but at the end of the day, these are still finite sets of points. Assume that we are trying to understand a continuous process that generated the data. One such example could be a process that can be modeled by a differential equation. In this case we probably want to be able to extract a continuous function, which raises the question, "How can one go from finite data to continuum objects with some sense of certainty?"

This talk will focus on how to go from finite data to the identification of a periodic orbit using algebraic topology.

Dr. Konstantin Mishaikow

Dr. Mishaikow is a Professor of Mathematics at Rutgers University. He is on the editorial boards of several mathematical publications, and served as Editor-in-Chief for the Journal of Differential Equations from 2000-2011.



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