

abstract

[Video of this lecture](#) COMPUTER SCIENCE/DISCRETE MATH I

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

This series of three talks will give a nontechnical, high level overview of geometric complexity theory (GCT), which is an approach to the P vs. NP problem via algebraic geometry, representation theory, and the theory of a new class of quantum groups, called nonstandard quantum groups, that arise in this approach. In particular, GCT suggests that the P vs. NP problem in characteristic zero is intimately linked to the Riemann Hypothesis over finite fields. No background in algebraic geometry, representation theory or quantum groups would be assumed.

References for GCT:

The basic plan of GCT is given in:

GCTflip: "On P vs. NP, Geometric Complexity Theory and the Flip I: high level view".

It has been partially implemented in a series of papers:

GCT1 to GCT11.

GCT1 to 4: Joint with Milind Sohoni

GCT5: Joint with Hari Narayanan

GCTflip, its abstract (GCTabs), and GCT1-8 are available on the speaker's personal home page. GCT8-11 are under preparation.

