

abstract

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

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

In this survey lecture (which will continue on Tue Feb 2) I plan to explain basic aspects of the representation theory of finite groups, and how these are applied to various questions regarding expansion and random walks on groups. These applications include

- Expanding generators in every group (Alon-Roichman, Xiao-Wigderson)
- Inhomogeneous random walks on non-Abelian groups (Gowers, Babai-Nikolov-Pyber)
- Shuffling of cards (Diaconis-Shahshahani)
- Expansion in solvable groups (Meshulam-Wigderson)
- Dimension expanders (Lubotzky-Zelmanov)

No special background in group theory will be assumed.