RUTGERS

UNIVERSITY | NEWARK

Department of Mathematics and Computer Science

Colloquium

Algebra and geometry from graphs

Ralph Kaufmann (Purdue University)

Abstract:

We present a program which is designed to take combinatorial categorical data and produce geometric spaces and classify universal algebraic operations. Specifically when applied to categories of graphs as founded by Borisov-Manin thought of as Feynman graphs, this program on one hand produces cubical and simplicial complexes corresponding to moduli spaces of Riemann surfaces and their Kontsevich-Penner compactifications. Another upshot of this is that the cubical diagonal leads to interesting inclusion exclusion bi and Hopf algebras.

3 − 4pm, Wednesday, Feburary 15, 2023

Room 204, Smith Hall