The SUMO Speaker Series for Undergraduates

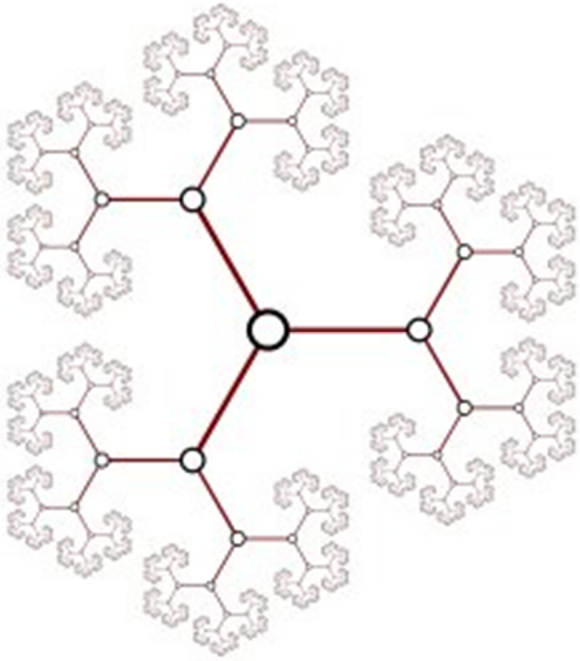
Thursday, December 5th

4:15-5:05, room 380C

(Food Provided)

Lattices, Trees, and 2-by-2 Matrices

Professor Zhiwei Yun



Abstract:

Getting bored with linear algebra? Here's a refreshing way of thinking about 2-by-2 matrices.

A lattice in a two-dimensional $\mathbb{Q}$-vector space V is a subgroup of V which is a free abelian group of rank two. For each prime number p we will construct a tree using certain lattices in V. These trees are infinite and look like the above picture when p is 2. One can learn a lot about 2-by-2 matrices from the beautiful geometry of these trees.

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