p- Laplacian on finitely generated groups

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Abstract:

Symmetry of a structure is represented by a group, which is a set with certain relations between each element. For example, the isometry group of a Riemannian manifold is one of the descriptions of symmetry of the Riemannian structure. In this talk, I will talk about a relation of some properties of a finitely generated group and the spectrum of the discrete p-Laplace operator on the Cayley graph of the group, which is a geometric realization of the group. Here, a finitely generated group is a group generated by some finite subset of the group, and the discrete p-Laplace operator is a Laplacian on ℓ^p space on the Cayley graph.