



Number Theory Seminar

Spectral gap in subgroups of $SL_d(\mathbb{Z}/n\mathbb{Z})$

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ABSTRACT. Uniform spectral gap (of the discrete Laplace operators) of a family of finite groups is also known as expansion in groups or property τ . In the case of $SL_2(\mathbb{Z}/N\mathbb{Z})$, a uniform spectral gap is present as a consequence of Selberg's 3/16 Theorem and the Burger-Brooks correspondence. In this talk, I will explain how to show uniform spectral gap in broader classes of groups, using combinatorics and dynamics. This talk is based on a joint work with Nicolas de Saxcé, which is built on works of Bourgain-Gamburd and Bourgain-Varjú among others.

Date: **August 22, 2023 (Tuesday)**

Time: 2:00pm - 3:00pm

Venue: Room 210, Run Run Shaw Bldg., HKU

All are welcome