Polylogarithms, homology of linear groups, and Steinberg modules



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Algebraic structures of Steinberg modules 1: Ring structure

Wednesday 11 June 2025 10:00 (50 minutes)

I will begin by reviewing the definition of Steinberg modules and apartments. By concatenating apartments, one can endow the direct sum of all Steinberg modules with the structure of an associative ring. I will also describe a space-level construction of this product due to Galatius—Kupers—Randal-Williams. This ring is not graded-commutative. However, it is commutative in an equivariant sense. I will introduce the necessary formalism and draw connections with the theory of representation stability. Using this framework, I will describe a version of the Church—Farb—Putman vanishing conjecture for congruence subgroups of SL_n(Z) proposed by myself, Napgal, and Patzt.

Presenter: MILLER, Jeremy