



Colloquium

Invariant of words from random matrices

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Host: Laszlo Erdős & Uli Wagner

Let w be a word in a free group and let G be a finite (or more generally compact) group. A w -random element of G is obtained by substituting the letters of w with uniform random elements from G . For example, if $w = xyxy^{-2}$, the random element is ghg^{-2} , with g and h independent uniformly random elements of G . Composing with linear representations of G , we get w -random matrices. A series of works over the last decade has revealed many intriguing phenomena around w -random elements in nice families of groups, such as the symmetric groups or the unitary groups. In particular, many invariants of words, some new and some well-known, play significant roles in this theory. This story involves probability, topology, algebra, combinatorics and representation theory. In the talk, which is aimed at graduate students, I will try to give a flavor of this interesting theory.

Wednesday, October 1, 2025 03:30pm - 04:30pm

Raiffeisen Lecture Hall, Central Building



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