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TBA

Lundi 3 Avril 2023, 14 :00
IHES, Amphithéâtre Léon Motchane(Séminaire Géométrie et groupes discrets)
Domaines : math

Titre : *New Kazhdan Groups with Infinitely Many Alternating Quotients*

Orateur : **Pierre-Emmanuel Caprace (Université Catholique de Louvain)**

Résumé : *Property (T) is a fundamental notion introduced by D. Kazhdan in the mid 1960's, that found numerous applications since then, notably in the context of rigidity of group actions. For a group G generated by a finite set S, property (T) means that there is a constant K¿0 such that given any unitary representation of G on a Hilbert space without non-zero invariant vectors, every unit vector is displaced by some element of S to a point that is at least K apart. Finite groups have that property. Kazhdan proved that lattices in simple Lie groups of rank at least 2 all do as well. I will introduce a new class of infinite groups enjoying Kazhdan's property (T) and admitting alternating group quotients of arbitrarily large degree. Those groups are constructed as automorphism groups of the ring of polynomials in n indeterminates with coefficients in the finite field of order p, generated by a suitable finite set of polynomial transvections. As an application, we obtain explicit presentations of hyperbolic Kazhdan groups with infinitely many alternating group quotients, and explicit generating pairs of alternating groups of unbounded degree giving rise to expander Cayley graphs. The talk is based on joint work with Martin Kassabov.*