RIGIDITY OF GROUPS AND ALGEBRAIC SPECTRAL GAPS

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ABSTRACT. The focus of the talk will be Kazhdan's property (T), a powerful rigidity property of groups, and a new approach to proving it via algebraic spectral gaps for the Laplacian in the group ring. This approach grew out of the work of Taka Ozawa and I will in particular present how it was used to prove property (T) for $\mathrm{Aut}(F_n)$, the automorphism groups of free groups. I will also discuss some applications and generalizations to higher cohomology and higher index theory.

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