

Sieve methods in group theory I: Powers in Linear groups

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A general sieve method for groups is formulated. It enables one to "measure" subsets of a finitely generated group. As an application we show that if Γ is a finitely generated non virtually-solvable linear group of characteristic zero then the set of proper powers in Γ is exponentially small. This is a far reaching strengthening of the main result of [HKLS].

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