

# Expander Graphs, Strong Ergodicity, and Superstrong Approximation

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**Abstract.** After introducing expander graphs and briefly discussing classical results and constructions, I will talk about recent developments pertaining to establishing expansion property for congruence quotients of thin groups –discrete subgroups of semi-simple groups which are Zariski dense but of infinite index. This expansion property is intimately related to strong ergodicity of the associated group action and can be viewed as a far-reaching generalization of the strong approximation theorem.