

Geometry of simple groups

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Simple groups form a very fundamental object of study in algebra. In particular, the finite simple groups have been classified in one of the biggest joint efforts in mathematics.

For the study of infinite (countable) groups, Gromov has proposed a geometric approach. He has shown that the geometry of a group does in fact reflect some of its algebraic properties. In this talk I will be interested in the interplay between geometry and simplicity. For instance:

1. What does the geometry of a group know about whether it is simple?
2. How does simplicity of a group constrain the geometry?

I will survey examples of phenomena that can occur.