Algebra Day on the Hudson

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Countable unions of finite groups as hidden symmetries of the free group.

Saturday, December 7th, 2024

Abstract:
Symmetries of a group G are encoded in the automorphism group $Aut(G)$. "Hidden symmetries" are encoded in the abstract commensurator $Comm(G)$. While many classes of finitely generated groups have reasonably well-understood commensurator — for example, when G is an arithmetic group, $Comm(G)$ is typically a group of matrices with rational entries — the abstract commensurator of a free group, $Comm(F_2)$, is still somewhat mysterious. I will explain how Edgar A. Bering IV and I fleshed out a topological perspective of commensurations that allowed us to show that every countable locally finite group is a subgroup of $Comm(F_2)$.