Manhattan Algebra Day

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Verbal subgroups of hyperbolic groups have infinite width

Friday, December 9, 2011
CUNY Graduate Center, Room C205
3:40 pm

Abstract:
Let G be a non-elementary hyperbolic group. Let w be a group word such that the set $w[G]$ of all its values in G does not coincide with G or 1. We show that the width of the verbal subgroup $w(G) = \langle w[G] \rangle$ is infinite. That is, there is no such $l \in \mathbb{Z}$ that any $g \in w(G)$ can be represented as a product of $\leq l$ values of w and their inverses. As a consequence, we obtain the same result for a wide class of relatively hyperbolic groups.

Joint work with Alexei Myasnikov.