

# “Group Theory International” Online Seminar

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“*Stackable groups*”

Thursday, Mar 1, noon (New York Time)

## Abstract:

Stackability is a combinatorial property of the Cayley graph for finitely generated groups that implies the existence of an inductive procedure for constructing van Kampen diagrams with respect to a canonical finite presentation. This property gives a common model for algorithms arising from both rewriting systems and almost convexity for groups. All groups with a finite complete rewriting system or a shortlex automatic structure, including all fundamental groups of closed 3-manifolds with a uniform geometry, have a stackable structure in which both the set of normal forms and the stacking algorithm set are regular languages. We also introduce a new pair of asymptotic quasi-isometry invariants that are filling inequalities refining the notions of intrinsic and extrinsic diameter inequalities for finitely presented groups. We discuss these “tame filling inequalities” for many examples of stackable groups, including Thompson’s group  $F$  and iterated Baumslag-Solitar groups. This is joint work with Mark Brittenham.

Next presentation: **Mar 15, 2012. TBA**