"Group Theory International" Online Seminar

Enric Ventura

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"The conjugacy problem in automaton groups is not solvable"

Thursday, Oct 20, noon (New York Time).

Abstract:
In this talk, we will construct a finitely presented group G with the following three properties:

(i) G is an automaton group (i.e. a self-similar group generated by a finite self-similar set of tree automorphisms),
(ii) G is (free-abelian)-by-free (more specifically, Z^d-by-free with d > 5), and
(iii) G has unsolvable conjugacy problem.

The construction is based on an orbit-undecidability result which led in a previous work (of Bogopolski-Martino-Ventura) to the first known examples of (free-abelian)-by-free groups with unsolvable conjugacy problem. Along the way, we also construct orbit undecidable, free subgroups of GL_d(Z) (for d > 5) and Aut(F_d) (for d > 4), answering a question of Bogopolski-Ventura. For proving the automaton part of the result we use techniques of Brunner and Sidki. The talk is based on joint work with Zoran Sunic.

Next presentation: **Nov 3, 2011.** *TBA*

Algebraic Cryptography Center