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Olga Kharlampovich* (olga@math.mcgill.ca), 805 Sherbrooke St. W., Montreal, QC H3C4J4, Canada. *Equations in groups, actions on trees, algorithmic topology and dynamical systems.*

I am going to talk about a formal rewriting process which has different names: Makanin-Razborov process, Rips machine, Rauzy-Veech induction, Elimination process. Solution of different problems from group theory, logic, topology, ergodic theory and dynamical systems was independently reduced to the study of the properties of this process. These exciting connections can be further developed to obtain new results and formulate new problems. (Received March 29, 2010)