

On the Burnside problem: contribution of the automaton groups

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Since it has been stated in 1902, the Burnside problem (on the existence of an infinite finitely generated group whose all elements have finite order) has aroused many developments in group theory. After a really complicated first solution given in 1964, a very simple example of a group answering to this problem was given in the 70s by Aleshin and then Grigorchuk, in terms of an automaton group. The link between the Burnside problem and the automaton groups was established.

In this talk, I will explain how Grigorchuk's example answers to the Burnside problem, and give some initial considerations towards a decidability procedure.