

PHD THESIS SUBJECT: EQUATIONS IN FREE PRODUCTS

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The investigation of the elementary theory of a group is a very interesting and fruitful subject. The most celebrated problem in this field is the problem of Tarski about the elementary equivalence of nonabelian free groups. In 1998, O. Kharlampovich and A. Myasnikov announced a positive solution to Tarski's conjecture. Another solution of the Tarski problem was given by Z. Sela, around 2000-2002, who uses tools from geometric group theory. In that context one needs to understand solutions of equations in free groups.

Since a free group is the free product of two copies of \mathbb{Z} , it becomes natural to see if some methods can be applied in the context of free products. The purpose of the thesis is to study equations in free products, by using limits of actions on reel trees.

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