Characterization of finitely generated groups by types
Nikolay Romanovskiy, Novosibirsk, Russia
(abstract)

The set of all types of tuples of elements of G is denoted by $tp(G)$. Two groups G and H are called *isotypic* if $tp(G) = tp(H)$. Isotypic groups appear naturally in logical (algebraic) geometry over groups which was developed in the works of B.I.Plotkin and his co-authors. We say that a finitely generated group G is *strongly defined by types* if for any isotypic to G group H *every* elementary embedding $G \to H$ is an isomorphism.

Theorem 1. *Every virtually polycyclic group is strongly defined by its types.*

Theorem 2. *Every finitely generated metabelian group is strongly defined by its types.*

Theorem 3. *Every finitely generated rigid group is strongly defined by its types. In particular, every free solvable group of finite rank is strongly defined by its types.*