FORMULAS OVER MINIMAL STRUCTURES

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We present one purely syntactic result on the structure of formulas over a minimal non-ordered structure (in the sense of [1])with the definable generic type.Let M be such a structure.

Definition 1. Let $\varphi(x;\bar{y})$ be a formula over M with free variables $y = (y_1, y_2, \dots, y_n)$and x.We say the variable x is*tame* if the set $\varphi(M;\bar{b})$ is finite for any $\bar{b} \in M$.

Definition 2. A formula over $M$is called *tame* if every free variablein it is tame.

Theorem. Each formula over M is equivalent to a Boolean combination of tame formulas.

References

1. K. Krupiński, P. Tanović and F. O. Wagner, Around Podewski's conjecture, arXiv:1201.5709v2.

SOME PROPERTIES OF COUNTABLE MODELS OF SMALL ORDERED THEORIES

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The report is devoted to the properties of countable models of small theories.A theorem is proved (together with T. Zambarnaya) on the existence of models over a countable set.All built models have the same finite diagram.In addition, the report considers conditions on 1-types of small ordered theories in terms of 2-formulas acting on the set of realizations of 1-type that provide the maximum number of countable models.

PERMUTATION GROUPS OF FINITE MORLEY RANK

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Binding groups are model-theoretic analogues of Galois groups; they were introduced in the 1970s by Zilber. They are very natural mathematical objects; to explain that we need a few words about permutation groups.

Given a permutation group G on a set X,a subset of X is said to be a base for G if its pointwise stabilizer in G is trivial. The minimal size of a base for G is denoted by $b(G)$. Finite bases, if exist, yield parameterizations, in terms of X, and structural analysis of group actions: if $b_1, \dots, b_n$ is a base, each permutation $g \in G$ is uniquely determined by an n-tuple $(b_1^g, \dots, b_n^g) \in X^n$.

Now let X be a finite dimensional vector space and G its automorphism group. A basis of X as a vector space is also a base for the action of G, and elements of G can be encoded as images of this base, that is, finite tuples of vectors, commonly known as matrices; the dependencies between vectors in the space allow us to express composition of automorphisms as product of matrices: the group G becomes *definable in* X. It was Zilber's seminal discovery that a similar construction can