Positive Numberings of the Families of Σ_n^{-1} Sets

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We refer to [1]-[3] for the basic notions of the computability theory and the theory of numberings. Let S be a family of the sets from the class Σ_n^{-1}, $n \in \omega$, of the hierarchy of Ershov [4].

A numbering $\alpha : \omega \to S$ is called Σ_n^{-1} - *computable* if

$$\{(x, m) | x \in \alpha m\} \in \Sigma_n^{-1}.$$

This definition is a slight modification of the notion of Σ_n^0- computable numbering given in [5].

A numbering α is called *positive*, [2], if

$$\{(n, m) | \alpha n = \alpha m\} \in \Sigma_1^0.$$

The conjecture on existence of any positive Σ_n^{-1} - computable numbering of the class of the all Σ_n^{-1} sets, $n \geq 2$, was formulated in [6].This conjecture was proved for second level of the hierarchy of Ershov.($n = 2$)

Theorem.,[7].The class Σ_2^{-1} has a positive Σ_2^{-1}- computable numbering. The following theorem is a more essential result.

Theorem. For every $n \geq 2$ the class Σ_n^{-1} sets has an infinite number of nonequivalent positive Σ_n^{-1}-computable numberings.

References

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