

EQUIVALENCE RELATIONS AND COMPUTABLE REDUCIBILITY

N. A. BAZHENOV

Let R and S be binary relations on the set of natural numbers ω . The relation R is *computably reducible* to S if there is a total computable function $f(x)$ such that for all $x, y \in \omega$, the conditions $(x R y)$ and $(f(x) S f(y))$ are equivalent. Computable reducibility on equivalence relations is a nice effective counterpart of Borel reducibility, which plays an important role in modern descriptive set theory. The systematic study of c -degrees, i.e. degrees induced by computable reducibility, was initiated by Yu. L. Ershov in 1970s. Remarkably, first works on computable reducibility pre-date the notion of Borel reducibility.

In the talk, we will discuss recent results on c -degrees of preorders and equivalence relations, which belong to the levels of various computability-theoretic hierarchies: hyperarithmetical, analytical, the Ershov hierarchy. We will also talk about related results in computable structure theory.

SOBOLEV INSTITUTE OF MATHEMATICS, NOVOSIBIRSK
Email address: `bazhenov@math.nsc.ru`