▸ NIKOLAY BAZHENOV, MANAT MUSTAFA, AND MARS YAMALEEV, *Computable reducibility, and isomorphisms of distributive lattices.*
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A standard tool for classifying computability-theoretic complexity of equivalence relations is provided by computable reducibility. Let E and F be equivalence relations on ω. The relation E is *computably reducible* to F, denoted by $E \leq_c F$, if there is a total computable function $f(x)$ such that for all $x, y \in \omega$,

$$(x\,E\,y) \;\Leftrightarrow\; (f(x)\,F\,f(y)).$$

The systematic study of computable reducibility was initiated by Ershov [1, 2].

Let α be a computable non-zero ordinal. An equivalence relation R is Σ^0_α *complete* (for computable reducibility) if $R \in \Sigma^0_\alpha$ and for any Σ^0_α equivalence relation E, we have $E \leq_c R$. The article [3] provides many examples of Σ^0_n complete equivalence relations, which arise in a natural way in recursion theory. In [4], it was proved that for each of the following classes K, the relation of computable isomorphism for computable members of K is Σ^0_3 complete: trees, equivalence structures, and Boolean algebras.

We prove that for any computable successor ordinal α, the relation of Δ^0_α isomorphism for computable distributive lattices is $\Sigma^0_{\alpha+2}$ complete. We obtain similar results for Heyting algebras, undirected graphs, and uniformly discrete metric spaces.

[1] Yu. L. Ershov, *Positive equivalences*, ***Algebra and Logic***, vol. 10 (1971), no. 6, pp. 378–394.

[2] Yu. L. Ershov, ***Theory of numberings*** (in Russian), Nauka, Moscow, 1977.

[3] E. Ianovski, R. Miller, K. M. Ng, and A. Nies, *Complexity of equivalence relations and preorders from computability theory*, ***Journal of Symbolic Logic***, vol. 79 (2014), no. 3, pp. 859–881.

[4] E. Fokina, S.-D. Friedman, and A. Nies, *Equivalence relations that are Σ^0_3 complete for computable reducibility*, ***Logic, Language, Information and Computation*** (Luke Ong and Ruy de Queiroz, editors), Lecture Notes in Computer Science, vol. 7456, Springer, Berlin, 2012, pp. 26–33.