

- WESLEY CALVERT, DOUGLAS CENZER, VALENTINA HARIZANOV, *Generically computable structures*.

School of Mathematical and Statistical Sciences, Southern Illinois University, Carbondale, IL 62901, USA.

E-mail: wcalvert@siu.edu.

Department of Mathematics, University of Florida, Gainesville, FL 32611, USA.

E-mail: cenzer@ufl.edu.

Department of Mathematics, George Washington University, Washington, DC 20052, USA.

E-mail: harizanv@gwu.edu.

Inspired by the study of generic computability of sets, based on the notion of asymptotic density and introduced in computability theory by C. Jockusch and P. Schupp, we extended such investigation to the context of computable structure theory. We introduced and studied the notion of a generically computable structure and its variants. We say that a countable structure is *generically computable* if it has a substructure the domain of which is a computably enumerable and asymptotically dense set and where the functions and characteristic functions of relations extend to partial computable functions. There are two directions in which this notion of generically computable structures could potentially trivialize: either all structures from a certain algebraic class have generically computable isomorphic copies, or only those having computable (or computably enumerable) copies. While we previously investigated generic and dense computability in general for equivalence structures and for directed graphs induced by one-to-one functions, our more recent focus is on generically computable abelian groups. For example, any (countable) abelian p -group has a generically computable isomorphic copy. We further characterize arbitrary abelian groups that have generically computable isomorphic copies, or other variants of densely computable copies.