

1092-08-180

George F McNulty* (mcnulty@math.sc.edu), Department of Mathematics, University of South Carolina, Columbia, SC 29208. *The Computational Complexity of the Minimal Variety Problem*. Preliminary report.

An *algebra* is a nonempty set equipped with a system of operations on that set, each having a finite rank. The *variety* generated by an algebra is the smallest class containing the algebra that is closed under the formation of direct products, subalgebras, and homomorphic images. A *minimal* variety is one that contains algebras of more than one element but whose only proper subvariety consists only of one-element algebras.

THE MINIMAL VARIETY PROBLEM

Input: A finite algebra \mathbf{A} of finite signature.

Problem: Decide if the variety generated by \mathbf{A} is minimal.

We prove that this problem is complete for deterministic doubly exponential time. (Received August 08, 2013)