A Polynomial-Time Test for a Difference Term in an Idempotent Variety

William DeMeo, Ralph Freese, and Matthew Valeriote

ABSTRACT. We consider the following practical question: given a finite algebra **A** in a finite language, can we efficiently decide whether the variety generated by **A** has a difference term? We answer this question in the idempotent case and then describe possible algorithms for constructing difference terms.

William DeMeo

Department of Mathematics, Iowa State University, Ames 50010, USA
e-mail: williamdemeo@gmail.com
URL: http://williamdemeo.github.io

Ralph Freese

Department of Mathematics, University of Hawaii, Honolulu 96822, USA
e-mail: ralph@math.hawaii.edu
URL: http://www.math.hawaii.edu/~ralph/

Matthew Valeriote

Department of Mathematics, McMaster University, Hamilton, Ontario, Canada L8S 4K1
e-mail: matt@math.mcmaster.ca
URL: http://ms.mcmaster.ca/~matt/