1172-03-209   **Jennifer Chubb** (`jcchubb@usfca.edu`), Department of Mathematics, University of San Francisco, San Francisco, CA 94117, **Valentina Harizanov** (`harizanv@gwu.edu`), Department of Mathematics, George Washington University, Washington, DC 20052, and **Dario Verta*** (`dverta1@gwmail.gwu.edu`), Department of Mathematics, George Washington University, Washington, DC 20052. *Describing properties in magmas.*

We are interested in the computability-theoretic complexity of determining whether an algebraic structure has a certain property, relative to the algorithmic description that presents a structure. We study computable magmas, i.e., those structures that can be presented in terms of a computable domain with a computable binary operation. We establish that certain properties (such as Markov properties) are hard in a given class of computable structures. In particular, we show some examples of Markov properties at higher levels of arithmetical hierarchy with some involving more than one property. Finally, we discuss possible generalizations and future work. (Received August 29, 2021)