1099-03-244 **Valentina Harizanov*** (harizanv@gwu.edu), Department of Mathematics, Washington, DC 20052. *Coding information into orders on groups.*

Orders on algebraic structures are ubiquitous in mathematics and have been studied since Dedekind, Hölder and Hilbert. Here, we consider total orderings of the elements of a group, which respect the group structure. In the last decade, the theory of such orders on groups has become an important tool in understanding the geometric properties of 3-dimensional manifolds. It is important to understand constructive properties of these orders. Thus, we ask whether computable orders are admitted. Furthermore, we use computablity-theoretic methods to investigate to what extent it is possible to code information into the orders on certain classes of groups. (Received February 10, 2014)