1128-03-187 **Valentina Harizanov*** (harizanv@gwu.edu), Department of Mathematics, George Washington University, Washington, DC 20052. *Structure of orders on structures.*

A magma is an algebraic structure with a single binary operation. A right order on a magma is a linear ordering of its domain, which is right-invariant with respect to the magma operation. We similarly define a left order and a bi-order on a magma. A magma is computable if it is finite, or if its domain can be identified with the set of natural numbers and the magma operation is computable. Interesting computable magmas that are orderable come from algebra and knot theory and include quandles, free groups, fundamental groups of closed and oriented surfaces, finitely generated one-relator parafree groups, and right-angled Artin groups. For orderable magmas, their spaces of orders are compact and in some cases homeomorphic to the Cantor set. We further investigate Turing complexity of orders on computable orderable magmas. (Received February 26, 2017)