A Construction of Magmas and Related Representation

Václav Cenker

Palacký University Olomouc

Abstract

In this talk, we present the following construction. Given a magma $\mathbf{G} = (G, \cdot)$ and a biunary algebra $\mathbf{I} = (I, \lambda, \rho)$ (an algebra with two unary operations), we define a new magma $\mathbf{G}^{\mathbf{I}} = (G^I, \cdot)$ by $(x \cdot y)(i) = x(\lambda i) \cdot y(\rho i)$ for any $x, y \in G^I$ and any $i \in I$. Our main goal is to characterize the variety generated by all magmas $\mathbf{G}^{\mathbf{I}}$ obtained in this way, where $\mathbf{G}$ and $\mathbf{I}$ are taken from arbitrary (but fixed) varieties of magmas and biunary algebras, respectively.