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The Ideal Theory and Arithmetic of Rings, Monoids, and Semigroups. Special Session A3

Scott Chapman
Sam Houston State University, USA
Marco D'ana
University of Catania, ITALY

During the last 20 years, the theory involving the structure of the arithmetic and ideal theory of various algebraic structures has been a popular topic and taken several important steps forward. Many applications of this theory, with particular attention to the multiplicative monoids of integral domains and their combinatorial or numerical applications to ring theory, have appeared throughout the mathematical literature. It is the aim of this session to review recent developments in this area by bringing together researchers from different areas of algebra under the umbrella of commutative monoids, semigroups, and rings. Topics to be covered include multiplicative ideal theory and general ideal systems, arithmetic in Krull and Prüfer monoids, commutative monoid rings, integer-valued polynomials, numerical monoids and congruence monoids, direct sum decompositions of modules, and various aspects of non-unique factorization.

E–mail: scott.chapman@shsu.edu.