

From Prover9 proofs to human-readable proofs: An experiment with residuated monoids

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We present a case study on the application of the fully automated theorem prover (Prover9) in the investigation of a class of algebraic structures. This tool, when combined with human insight and traditional algebraic methods, helped us to explore the problem space quickly and effectively. The algebraic structures we considered are generalisations of Heyting algebras known as hoops. This approach helped us to discover new theorems and to find new or improved proofs of known results.