Algebraic closure of some generalized convex sets

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Algebraic convex sets over a principal ideal subdomain R of the ring of real numbers are described as algebras equipped with a set of non-associative and non-commutative binary multiplications. They provide models for spaces with holes. Among the algebraic convex sets, geometric convex sets are described as the intersections of convex subsets of real affine spaces with corresponding affine spaces over R. We will introduce the concept of algebraic closure for geometric convex sets, using certain left quasigroup operations, and examine some of its properties. In particular, the algebraic and topological closures of geometric convex subsets of finite-dimensional affine spaces over R coincide.