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Semicrossed Products over Semigroups

Group dynamical systems and the crossed product algebras they generate have long been a source of interesting operator algebras. The natural generalization, inspired by concrete examples of operator algebras, is to consider semigroup dynamical systems. That is, A is an operator algebra and S is a semigroup acting on A by endomorphisms. The goal is to construct a larger algebra, containing A , that also encodes the information of the action of S on A . The non-self-adjoint versions of these algebras are called semicrossed product algebras.

Recent work has shown that the C^* -envelope of a semicrossed algebra can be useful discovering properties of the underlying dynamical system. However, whilst in the C^* -literature a wide class of semigroups are considered for crossed-products, the majority of the work on semicrossed products has been carried out in the case when the semigroup S is the non-negative integers.

In this talk we present some recent results on semicrossed products arising from a wider class of positive cones. This is joint work with Kenneth R. Davidson and Evgenios T.A. Kakariadis.