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Semicrossed Product Algebras

In this talk we will discuss nonself-adjoint crossed product algebras formed by the action of a semigroup \mathcal{S} by endomorphisms $\{\alpha_s\}_{s \in \mathcal{S}}$ on a unital operator algebra \mathcal{A} . In particular we will be looking at crossed products by semigroups of the form $\mathcal{S} = \sum_{i=1}^{\oplus k} \mathcal{S}_i$ where each \mathcal{S}_i is a subsemigroup of the positive real line. We restrict ourselves to the the crossed product algebras which relate to what are known as Nica-covariant (aka doubly-commuting) representations of the dynamical system. This restriction is partly due to the impossibility of forming a dilation theory for more general representations. We will conclude with a discussion of the C^* -envelope of these algebras.