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*Representations of Toeplitz-Cuntz-Krieger algebras*

By a result of Glimm, we know that classifying representations of non-type-I  $C^*$ -algebras up to unitary equivalence is essentially impossible (at least with countable structures). Instead of this, one either restricts to a tractable subclass or weakens the invariant. In the theory of free semigroup algebras, the former is achieved for atomic and finitely correlated representations of Toeplitz-Cuntz algebras.

This talk is about joint work with Ken Davidson and Boyu Li, where we generalize these results to representations of Toeplitz-Cuntz-Krieger algebras associated to a directed graph  $G$ . We prove a classification theorem akin to that of Davidson and Pitts on atomic representations, and of Davidson, Kribs and Shpigel on finitely correlated representations. Finally, we show how a result of Trahtman from graph theory gives us a large class of directed graphs for which the free semigroupoid algebra is in fact self-adjoint.