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Algebraic Kirchberg-Phillips problem and twisted Katsura algebras

The algebraic Kirchberg-Phillips problem consists of finding a sizable, meaningful class of simple purely infinite unital algebras over a field that can be classified by their K-theory. This class should at least contain the SPI Leavitt path algebras. The talk will review some results on the KP problem for Leavitt path algebras. We shall also introduce twisted Katsura algebras, give sufficient conditions that guarantee pure infinite simplicity for such algebras and describe a large class of algebras that are kk-isomorphic to such SPI twisted Katsura algebras. We shall aim to convince the audience that SPI twisted Katsura algebras are a reasonable class of algebras to try and extend existing K-theoretical classification results that are known for SPI Leavitt path algebras.