

Subproduct systems, Gysin sequences and $SU(2)$ -symmetries

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For a C^* -correspondence from a C^* -algebra to itself one may associate a C^* -algebra referred to as the Cuntz–Pimsner algebra of the C^* -correspondence. Special cases are the Cuntz–Krieger algebras and crossed products by the integers. Furthermore, the K -theory of Cuntz–Pimsner algebras can often be computed by means of a six term exact sequence which generalizes the K -theoretic Gysin sequence of a complex hermitian line bundle.

A more general construction of C^* -algebras associated to module theoretic data comes from subproduct systems over the monoid of non-negative integers. But so far in this context there are no general tools available for computing the K -groups of such a Cuntz–Pimsner algebra.

In this talk we investigate a class of C^* -algebras constructed from a finite dimensional representation of $SU(2)$ via an associated subproduct system. We compute the K -theory of this kind of Cuntz–Pimsner algebra by means of a six term exact sequence sharing the characteristic properties of the K -theoretic Gysin sequence of a complex hermitian vector bundle of rank 2.

The talk is based on joint work with Francesca Arici.