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Spheres, Euler classes and the K-theory of C^* -algebras of subproduct systems

In this talk, we shall consider $SU(2)$ -equivariant subproduct system of Hilbert spaces and their Toeplitz and Cuntz–Pimsner algebras. We will provide results about their topological invariants through $K(K)$ -theory. More specifically, we will show that the Toeplitz algebra of the subproduct system of an $SU(2)$ -representation is equivariantly KK -equivalent to the algebra of complex numbers so that the $(K)K$ -theory groups of the Cuntz–Pimsner algebra can be effectively computed using a Gysin exact sequence involving an analogue of the Euler class. Finally, we will discuss why and how C^* -algebras in this class satisfy Poincaré duality.