

Universal C^* -algebras from C^* -correspondences and the topology of circle bundles

Francesca Arici
Universiteit Leiden

In 1997 Pimsner described how to construct two universal C^* -algebras associated with an injective C^* -correspondence, now known as the Toeplitz–Pimsner and Cuntz–Pimsner algebras. In this talk I will recall their construction, focusing for simplicity on the case of a finitely generated projective correspondence. I will describe the associated six-term exact sequence in $K(K)$ -theory and explain how these can be used in practice for computational purposes. Motivated by the theory of fibre bundles, I will describe how, in the case of a self-Morita equivalence, these exact sequences can be interpreted as an operator algebraic version of the classical Gysin sequence for circle bundles. If time allows, I will hint at how to extend this analogy to high sphere bundles.