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Shen Lu* (shen.lu@colorado.edu). *Constructing finitely generated projective modules for noncommutative solenoids.*

For a fixed prime p , a noncommutative solenoid as defined by Frédéric Latrémolière and Judith Packer is a twisted group C*-algebra $C^*\left(\mathbb{Z}[\frac{1}{p}] \times \mathbb{Z}[\frac{1}{p}], \sigma\right)$, where $\mathbb{Z}[\frac{1}{p}] := \left\{\frac{j}{p^k} \in \mathbb{Q} : j \in \mathbb{Z}, k \in \mathbb{N}\right\}$ is an additive discrete group and σ is a \mathbb{T} -valued group 2-cocycle (multiplier) on $\mathbb{Z}[\frac{1}{p}] \times \mathbb{Z}[\frac{1}{p}]$. In this talk, we discuss two different ways of constructing projective modules over the NC solenoids: by writing the NC solenoids as direct limits of noncommutative tori and by constructing the Heisenberg equivalence bimodule of Rieffel. We use these constructions to discuss some recent progress made in classifying the irrational NC solenoids up to Morita equivalence. (Received September 07, 2019)