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Judith A. Packer* (packer@colorado.edu), Department of Mathematics, Campus Box 395, University of Colorado, Boulder, Boulder, CO 80309. *Using p -adic wavelets to analyze equivalence bimodules between noncommutative solenoids.* Preliminary report.

Let p be a prime number, and consider a noncommutative solenoid $C^*(\mathbb{Z}[\frac{1}{p}] \times \mathbb{Z}[\frac{1}{p}], \Psi_\alpha) = \mathcal{A}_\alpha$ where Ψ_α is a multiplier on $\mathbb{Z}[\frac{1}{p}] \times \mathbb{Z}[\frac{1}{p}]$. The speaker together with F. Latrémolière constructed a Morita equivalence bimodule between \mathcal{A}_α and \mathcal{A}_β for a different multiplier Ψ_β on $\mathbb{Z}[\frac{1}{p}] \times \mathbb{Z}[\frac{1}{p}]$ using a Heisenberg equivalence bimodule of Rieffel. The bimodule was constructed using the locally compact abelian group $M = [\mathbb{Q}_p \times \mathbb{R}]$, which suggested that p -adic harmonic analysis might have additional applications in this situation. This talk will use p -adic wavelets to investigate the question of whether the corresponding Hilbert module Ξ between \mathcal{A}_α and \mathcal{A}_α can be viewed as a nested sequence of countably generated Hilbert modules over rotation algebras. (Received January 27, 2014)