APPROXIMATE EQUIVALENCE IN VON NEUMANN ALGEBRAS

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Abstract. Suppose $A$ is a separable unital ASH $C^*$-algebra, $M$ is a sigma-finite II$_\infty$ factor von Neumann algebra, and $\pi, \rho : A \to M$ are unital $*$-homomorphisms such that, for every $a \in A$, the range projections of $\pi(a)$ and $\rho(a)$ are Murray von Neumann equivalent in $M$. We prove that $\pi$ and $\rho$ are approximately unitarily equivalent modulo $K_M$, where $K_M$ is the norm closed ideal generated by the finite projections in $M$. We also prove a very general result concerning approximate equivalence in arbitrary finite von Neumann algebras.


Keywords and phrases: Approximate equivalence, semifinite von Neumann algebra, ASH $C^*$-algebra, center-valued trace, $M$-rank.

REFERENCES


