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Randall D. Helmstutler* (rhelmstu@umw.edu), Department of Mathematics, 1301 College Avenue, Fredericksburg, VA 22401, and **Roberto Palomba**. *The structure of endomorphism monoids in conjugate categories*. Preliminary report.

Given a category \mathcal{C} , one can search for Morita equivalences of categories of functors taking values in \mathcal{C} . In the case when \mathcal{C} is abelian or a stable model category, there are several known examples of pairs of small categories $(\mathcal{B}, \mathcal{A})$ yielding Morita equivalences between the functor categories $[\mathcal{B}, \mathcal{C}]$ and $[\mathcal{A}, \mathcal{C}]$. In most cases the category \mathcal{B} arises as a sort of conjugate of \mathcal{A} .

Our strategy is to apply structural results of semigroup theory to gain information about \mathcal{B} via its endomorphisms. In the case that \mathcal{B} is part of a conjugate pairing, we show that its various endomorphism monoids exhibit a very strong homogeneity in their group \mathcal{H} -classes. We also indicate the relation of this homogeneity to both the automorphism groups and the idempotent endomorphisms in the category. (Received September 18, 2007)