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 p -Approximation Properties of $PF_p(G)$ and $PM_p(G)$

Let $1 < p < \infty$. We discuss various approximation properties of the pseudofunction algebras $PF_p(G)$ and the pseudomeasure algebras $PM_p(G)$ in the category of p -operator spaces. More precisely, we show that a discrete group G is p -weakly amenable if and only if $PF_p(G)$ has the p -completely bounded approximation property (respectively, $PM_p(G)$ has weak* continuous p -completely bounded approximation property). We also show that a discrete group G has the p -AP if and only if $PF_p(G)$ has the p -OAP (respectively, $PM_p(G)$ has the weak* p -OAP). These results generalize the work of Haagerup and Kraus to the general case of $1 < p < \infty$.

This is a joint work with Jung Jin Lee.