Weakly Stable Relations and Inductive Limits of $C^*$-algebras

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Abstract. We show that if $\mathcal{A}$ is a class of $C^*$-algebras for which the set of formal relations $\mathcal{R}$ is weakly stable, then $\mathcal{R}$ is weakly stable for the class $\mathcal{B}$ that contains $\mathcal{A}$ and all the inductive limits that can be constructed with the $C^*$-algebras in $\mathcal{A}$.

A set of formal relations $\mathcal{R}$ is said to be weakly stable for a class $\mathcal{C}$ of $C^*$-algebras if, in any $C^*$-algebra $A \in \mathcal{C}$, close to an approximate representation of the set $\mathcal{R}$ in $A$ there is an exact representation of $\mathcal{R}$ in $A$. 

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