

On Completely Bounded Maps

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Abstract

Completely bounded maps theory is an important field due to its significance, application and mathematics itself. Properties of maps such as continuity, contractivity, positivity and boundedness have been discussed with good results by Mathematicians. However, other properties such as complete boundedness and complete positivity have not been exhaustively discussed by researchers. In this paper, we have investigated complete positivity of a map. Given a C^* -algebra A and other generated C^* -algebras on A , we have investigated these forms of C^* -algebras and constructed maps between these C^* -algebras under certain conditions and investigated conditions under which they are completely bounded. Examples of completely bounded maps have been given. A map is completely bounded if its completely bounded norm is finite. We have also discussed whether this completely bounded norm is indeed a norm. The results of this study will pave way for further introduction of C^* -algebras from the known ones, which will be helpful in the development of the research on completely bounded maps on these generated C^* -algebras and may also be applied by mathematicians in solving several problems in algebra.

Keywords: *norm, completely bounded norm and completely bounded maps.*