Ideal F-norms on C*-algebras

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Abstract

© 2015, Allerton Press, Inc. We show that every measure of non-compactness on a W*-algebra is an ideal F-pseudonorm. We establish a criterion of the right Fredholm property of an element with respect to a W*-algebra. We prove that the element −I realizes the maximum distance from a positive element to a subset of all isometries of a unital C*-algebra, here I is the unit of the C*-algebra. We also consider differences of two finite products of elements from the unit ball of a C*-algebra and obtain an estimate of their ideal F-pseudonorms. We conclude the paper with a convergence criterion in complete ideal F-norm for two series of elements from a W*-algebra.

Keywords

C*-algebra, compact operator, Fredholm operator, Hilbert space, ideal, ideal F-norm, isometry, linear operator, measure of non-compactness, trace, unitary operator, W*-algebra