Abstract

Properties of elementary operators have been investigated in the recent past under a variety of aspects. Their norms have been a subject of interest for research in operator theory. Specifically, deriving a formula to express the norm of an arbitrary elementary operator in terms of the norms of its coefficient operators remains a topic of research in operator theory. In this thesis, we determined the norm of an elementary operator of length two acting on a C*-algebra. We began by giving the background information necessary for this research. In particular, we gave definitions and terminologies used in the sequel. Some known results on computation of both the norm and lower bounds of the norm of Jordan elementary operator using maximal numerical ranges and finite rank operators were then recalled. Finally, the norm and some lower bounds of the norm of elementary operator of length two were computed using maximal numerical ranges and finite rank operators. C*-algebras have properties that make them suitable for modeling algebras of physical observables in quantum mechanics. Every C*-algebra can be represented as a C*-subalgebra of the C*-algebra of bounded linear operators on a complex Hilbert space. Determining norms of operators on this C*-algebra is a contribution in the study of the structures of C*-algebras.