# Some Generalizations of Kadison's Theorem: A Survey

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AMS Class (2000): 47L05, 46B20

**Abstract**

Motivated by a well-known result of Kadison that describes surjective isometries of the space of compact and the space of bounded operators on a Hilbert space, in this paper we investigate the structure of surjective isometries on the space of compact and on the space of bounded operators between Banach spaces. We give an example to show that isometries in general need not be of the canonical form. As an application of our study of the group of isometries, we consider the algebraic reflexivity of the group of isometries. We show that for a Banach space $X$ that is a $M$-ideal in its bidual, the algebraic reflexivity of the group of isometries of $X$ implies the algebraic reflexivity of the group of isometries of the bidual. For a metrizable compact Choquet simplex, we show that any nice operator that is in the algebraic closure of the set of nice surjections is a surjection.