

## **Metric equivalence as an almost similarity property**

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### **Abstract**

Various results that relate to almost similarity and other classes of operators such as isometry, normal, unitary and compact operators have been extensively discussed. It has been shown that if operators  $S$  and  $T$  are unitarily equivalent, then  $S$  is almost similar to  $T$ . Similarly, it has been shown that operators  $A$  and  $B$  are such that  $A$  is almost similar to  $B$  and if  $A$  is Hermitian, then  $A$  and  $B$  are said to be unitarily equivalent. Metric equivalence property which is a new relation in operator theory has drawn much attention from mathematicians in the recent past. Two operators  $S$  and  $T$  are unitarily equivalent if they are metrically equivalent projections. It has been shown that if operators  $S$  and  $T$  are unitarily equivalent, then  $S$  is metrically equivalent to  $T$ . However, there is no literature that has been shown for the conditions under which metric equivalence and almost similarity coincide. In this paper we will therefore strive to establish the equivalence relation between metric equivalence property and almost similarity relation. To achieve this, properties of invertible operators, normal operators, similar operators, unitarily operators as well as projection and self-adjoint operators will be employed.