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ABSTRACT NO. 002

A Characterization of Partial Isometries and Positive Operators in Hilbert Space

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ABSTRACT

In this paper, we prove that if T is a bounded linear transformation U from one Hilbert space H to a Hilbert space K, then there exists a partial isometry U from H to K and a positive operator P such that T=UP.

Consequently, if T=UP is the polar decomposition of T, we find a necessary and sufficient condition that a partial isometry U is an isometry.

Key Words:

Polar Decomposition, Partial Isometries and Positive Operators.