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Best approximations, distance formulas and orthogonality in $C^*$-algebras. (English)
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Summary: For a unital $C^*$-algebra $A$ and a subspace $B$ of $A$, a characterization for a best approximation to an element of $A$ in $B$ is obtained. As an application, a formula for the distance of an element of $A$ from $B$ has been obtained, when a best approximation of that element to $B$ exists. Further, a characterization for Birkhoff-James orthogonality of an element of a Hilbert $C^*$-module to a subspace is obtained.

MSC:

46L05 General theory of $C^*$-algebras
46L08 $C^*$-modules
41A50 Best approximation, Chebyshev systems
46B20 Geometry and structure of normed linear spaces
41A52 Uniqueness of best approximation

Full Text: Link

References:


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