Vertices of the unit ball of subspaces in $\mathcal{L}(H)$ and strong unicity of best approximation in $\mathcal{L}(l_2^2)$. (English) Zbl 07425717

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Summary: Let $\mathcal{L}(H)$ be the space of linear operators acting from the finite-dimensional real Hilbert space into itself. The purpose of this paper is to present results concerning the geometric properties of some subspaces of $\mathcal{L}(H)$. In particular, vertices of the closed unit ball of those subspaces are discussed. The problem of best approximation in the space $\mathcal{L}(l_2^2)$ is investigated. Moreover, in this paper we show an example of an effective method seeking a unique minimal projection which is strongly unique.

MSC:

46B20 Geometry and structure of normed linear spaces
41A35 Approximation by operators (in particular, by integral operators)
41A52 Uniqueness of best approximation
41A65 Abstract approximation theory (approximation in normed linear spaces and other abstract spaces)
47A58 Linear operator approximation theory

Keywords:
vertex of the closed unit ball; strongly unique best approximation; strongly unique minimal projection

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References:


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