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Relation Between Best Approximant and Orthogonality in \mathcal{C}_1 -classes

Authors: [Mecheri Salah](#),
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Abstract: Let E be a complex Banach space and let M be subspace of E . In this paper we characterize the best approximant to $A \in E$ from M and we prove the uniqueness, in terms of a new concept of derivative. Using this result we establish a new characterization of the best- \mathcal{C}_1 approximation to $A \in \mathcal{C}_1$ (trace class) from M . Then, we apply these results to characterize the operators which are orthogonal in the sense of Birkhoff.



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