

Remarks On Fuglede Putnam Theorem For Normal Operators

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Remarks On Fuglede Putnam Theorem

The result. Theorem (Fuglede) Let T and N be bounded operators on a complex Hilbert space with N being normal. If $TN = NT$, then $TN^* = N^*T$, where N^* denotes the adjoint of N . Normality of N is necessary, as is seen by taking $T = N$. When T is self-adjoint, the claim is trivial regardless of whether N is normal: $TN^* = (NT)^* = (TN)^* = N^*T$.

Fuglede's theorem - Wikipedia

PUTNAM THEOREM FOR -HYPONORMAL Y The familiar Fuglede-Putnam theorem asserts that if A and B are normal operators and if X is an operator such that , then . We shall relax the normality in the hypotheses on A and B .

Remarks On Fuglede Putnam Theorem For Normal Operators

Introducing the trick of considering the operators \hat{A} and \hat{B} on \hat{H} , S.K. Berberian, p. 347, §9, showed that the Putnam-Fuglede theorem indeed follows from the Fuglede theorem. For this reason, Putnam-Fuglede theorems are sometimes also referred to as Berberian-Putnam-Fuglede theorems.

Putnam-Fuglede theorems - Encyclopedia of Mathematics

Remarks on Fuglede-Putnam theorem 1391 given by $T^2 = T^*T$ and thus the self-commutator of T is $T^2 - T^*T$. Using operator theoretic concepts, we proved in [3] the following. Theorem 1. Let $S \in \mathcal{K}(H)$ with $\|S\| \leq 1$ and let $X \in \mathcal{K}(H)$ such that $R := SX - XS \in \mathcal{K}(H)$. Then $Q := S^*XS - XS^*S \in \mathcal{K}(H)$.

Remarks on Fuglede-Putnam Theorem for Normal Operators ...

A remark on generalised Putnam-Fuglede theorems. January 2001; Proceedings of the American ... Radjabalipour, An extension of Putnam-Fuglede theorem for hyponormal operators, Math. Z. 194 ...

(PDF) A remark on generalised Putnam-Fuglede theorems

In a recent note, we proved a Fuglede-Putnam commutativity theorem for almost normal operators with finite modulus of C_2 -quasitriangularity modulo the Hilbert-Schmidt class. In this note we show how our proof can be adjusted to the case of normal operators to obtain an optimal norm estimate obtained by G. Weiss.

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The Putnam-Fuglede theorem now says that if A and B are commuting Hermitian operators on a complex Banach space, then, given .

Putnam-Fuglede theorems - Encyclopedia of Mathematics

Abstract The rectangular matrix version of the Fuglede-Putnam theorem is used to prove that, for rectangular complex matrices A and B , both AB and BA are normal if and only if $A^*AB = BAA^*$ and $B^*BA = ABB^*$. We deduce some results relating the rank of A and the factors in a polar decomposition of A to the normality of AB and BA .

The Fuglede-Putnam theorem and normal products of matrices ...

[$ABX + S$]-[S]. $\|B^*A - B^*X + S\| \leq \|S\|$. (2) Suppose the pair of operators (A, B^*) satisfies the Fuglede-Putnam Property. If $A^2X = XB^2$ and $A^3X = XB^3$, then $AX = XB$. (3) Let $A, B \in \mathcal{K}(H)$. Let ϕ be such that $A, B^* \in \mathcal{K}(H)$.

On the generalized Fuglede-Putnam Theorem | Tamkang ...

By Fuglede's theorem, one has. Comparing entries then gives the desired result. From Putnam's generalization, one can deduce the following: Corollary If two normal operators M and N are similar, then they are unitarily equivalent. Proof: Suppose $MS = SN$ where S is a bounded invertible operator. Putnam's result implies $M^*S = SN^*$, i.e.

fuglede s theorem : definition of fuglede s theorem and ...

M.I. Karakhanyan, "Asymptotical Version of the Fuglede-Putnam Theorem on Commutators of Linear Bounded Operators in Strong and Weak Operator Topologies" Dokladi Acad. Nauk. Armenii [Armenia Academy of Sciences Reports] 23(5), 265-268, (1981). Google Scholar

Some remarks on general commutators theorems | SpringerLink

Abstract. The validity of the analogs of the Fuglede-Putnam theorem in the algebra $(B(H), *)$ of bounded operators acting on a Hilbert space H with an arbitrary involution $*$ is considered, together with the same problem in certain *-subalgebras of these algebras and in related constructions.The results obtained in this way are used to solve stability problems for "Fuglede" classes with ...

Fuglede-Putnam theorem in algebras with involutions ...

A Fuglede-Putnam property for N -class $A(K)$ operators. Ahmed Bachir, Durairaj Senthikumar, Nawal Ali Sayyaf. 1 Department of Mathematics, College of Science, King Khalid University, Abha, Saudi Arabia 2 Government Arts College, Coimbatore, Tamilnadu, India

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bounded linear operators on H, K . The familiar Fuglede-Putnam's theorem is as follows: Theorem 1.1. (Fuglede-Putnam) Let $A \in B(H), B \in B(K)$ be normal operators. If $AX = XB$ for some $X \in B(K, H)$, then $A^*X = XB^*$. Many authors have extended this theorem for several classes of operators, for example (see [7, 10, 11, 22, 24]). We say that A, B satisfy Fuglede-Putnam's theorem if $AX = XB$ implies $A^*X = XB^*$.

FUGLEDE-PUTNAM THEOREM FOR -HYPONORMAL Y

A Fuglede-Putnam type theorem for log-hyponormal operators is proved. Also, it is shown that a log-hyponormal operator that is quasimilar to an isometry is unitary and that a log-hyponormal ...

Some remarks on general commutators theorems | Request PDF

Fuglede-Putnam type theorems involving -quasihyponormal, dominant, and w -hyponormal operators, which are extensions of the results by Tanahashi, Patel, Uchiyama, et al., are obtained.

Fuglede-Putnam type theorems for (p , k) S(p,k ...

V. Lauric, Fuglede-Putnam thm mod the trace-class does not hold for almost normal op's with finite modulus of C_1 -quasitriangularity, Int. J. Math. Analysis, 8 (2014), no. 43, 2123-2128. V. Lauric, Remarks on Fuglede-Putnam theorem for normal operators modulo Hilbert-Schmidt class, Int. Math. Forum, 9 (2014), no.29, 1389-1396.

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