Title: Characterizations of Lie-skew multiplicative maps on operator algebras of indefinite inner product spaces

Author(s): Runling An and Jinchuan Hou

Let H and K be indefinite inner product spaces. In this paper, we show that a bijective map $\Phi : \mathcal{B}(H) \to \mathcal{B}(K)$ satisfies $\Phi(AB - BA^{\dagger}) = \Phi(A)\Phi(B) - \Phi(B)\Phi(A)^{\dagger}$ for every pair $A, B \in \mathcal{B}(H)$ if and only if there exist a unitary or conjugate unitary operator $U \in \mathcal{B}(H, K)$ such that $\Phi(A) = UAU^{\dagger}$ for all $A \in \mathcal{B}(H)$.

Address:
Runling An
Department of Mathematics
Taiyuan University of Technology
TaiYuan, 030024
P.R. China

Address:
Jinchuan Hou
Department of Mathematics
Taiyuan University of Technology
TaiYuan, 030024
P. R. China