SIMILARITY JORDAN MULTIPLICATIVE MAPS

ZIJIE QIN AND FANGYAN LU

Abstract. We characterize bijections $\phi : B(X) \to B(X)$ satisfying that $\phi(AB+BA)$ and $\phi(A)\phi(B) + \phi(B)\phi(A)$ are similar for all $A, B \in B(X)$.

REFERENCES

[1] R. AN AND J. HOU, *Additivity of Jordan multiplicative maps on Jordan operator algebras*, Taiwanese J. Math. 10 (2006) 45–64.

[2] Z. BAI AND S. DU, *Characterization of sum automorphisms and Jordan triple automorphisms of quantum probabilistic maps*, J. Phys. A 43 (2010), 165210 (9 pp.).

[3] M. DOBOVIĚK, B. KUZMA, G. LEŠNJAK, C. K. LI AND T. PETEK, *Mappings that preserve pairs of operators with zero triple Jordan product*, Linear Algebra Appl. 426 (2007), 255–279.

[4] S. DU AND J. HOU, *Nonlinear maps preserving similarity on B(X)*, Linear Algebra Appl. 420 (2007), 506–516.

[5] A. E. GUTERMAN AND B. KUZMA, *Preserving zeros of a polynomial*, Communications in Algebra, 37 (2009), 4038–4064.

[6] F. HIAI, *Similarity preserving linear maps on matrices*, Linear Algebra Appl. 97 (1987), 127–139.

[7] J. HOU AND X. ZHANG, *Additive maps preserving similarity of operator on Banach spaces*, Act Math.Sin.(Engl.Ser.) 22 (2006), 179–186.

[8] G. JI, *Similarity-preserving linear maps on B(H)*, Linear Algebra Appl. 368 (2003), 249–257.

[9] SANG OG KIM AND C. PARK, *Additivity of Jordan triple product homomorphisms on generalized matrix algebras*, Bull. Korean Math. Soc. 50 (2013), 2027–2034.

[10] B. KUZMA, *Jordan triple product homomorphisms*, Monatsh. Math. 149 (2006), 119–128.

[11] G. LEŠNJAK AND N.-S. SZE, *On injective Jordan semi-triple maps of M_n*, Linear Algebra Appl. 414 (2006), 383–388.

[12] C. K. LI, P. ŠEMRL AND N.-S. SZE, *Maps preserving the nilpotency of products of operators*, Linear Algebra Appl. 424 (2007), 222–239.

[13] M. LIM, *A note on similarity preserving linear maps on matrices*, Linear Algebra Appl. 190 (1993), 229–233.

[14] F. LU, *Additivity of Jordan maps on standard operator algebras*, Linear Algebra Appl. 357 (2002), 123–131.

[15] F. LU AND C. PENG, *Similarity-preserving linear maps on B(X)*, Studia Math. 209 (2012), 1–10.

[16] L. MOLNÁR, *Non-linear Jordan triple automorphisms of sets of self-adjoint matrices and operators*, Studia Math. 173 (2006), 39–48.

[17] T. PETEK, *Linear mappings preserving similarity on B(H)*, Studia Math. 161 (2004), 177–186.

[18] T. PETEK, *A note on unitary similarity preserving linear mappings on B(H)*, Linear Algebra Appl. 394 (2005), 217–224.

[19] T. PETEK, *Unitary similarity preserving linear Maps on B(H)*, Integral Equations Operator Theory 82 (2015), 51–60.

[20] Z. QIN AND F. LU, *Involution similarity preserving linear maps*, Studia Math. (to appear)

[21] P. ŠEMRL, *Maps on idempotent matrices over division rings*, J. Algebra 298 (2006), 142–187.

[22] P. ŠEMRL, *Maps on idempotents*, Studia Math. 169 (2005), 21–44.

[23] P. ŠEMRL, *Similarity preserving linear maps*, J. Operator Theory 60 (2008), 71–83.

[24] Z. YANG AND F. LU, *Surjective Jordan maps and Jordan triple maps*, Linear Algebra Appl. 535 (2017), 1–11.

[25] L. ZHAO AND J. HOU, *Jordan zero-product preserving additive maps on operator algebras*, J. Math. Anal. Appl. 314 (2006), 689–700.

Operators and Matrices
www.ele-math.com
oam@ele-math.com