

Editorial

Preserver Problems on Function Spaces, Operator Algebras, and Related Topics

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This special volume of the journal Abstract and Applied Analysis was originally conceived to provide authors and readers a publication to present the most recent advances in the study of those (linear) mappings preserving ranks, spectra, spectral radii, numerical ranges, numerical radii, orthogonality, or disjointness between different, though related, structures studied in Matrix theory, Functional Analysis, and Operator theory, including Function spaces, Operator algebras, and C^* -algebras.

This volume includes 23 original research papers by 66 authors. The selection of the papers included in this volume, which has been based on a strict international peer review procedure, contains a representative list of manuscripts with newfangled results which covers the different topics considered in our original proposal.

In the setting of preservers between C^* -algebras and Matrix spaces, the volume includes a characterization of ξ -Lie multiplicative isomorphisms between von Neumann algebras by Y. Song et al.; a study on linear maps on upper triangular matrices spaces preserving idempotent tensor products by L. Yang et al. M. Burgos et al. study approximate versions of Hua's theorem and other related results for Banach algebras and C^* -algebras, including a study of linear maps approximately preserving the conorm between unital C^* -algebras. Pioneering achievements on orthogonally additive and orthogonality preserving holomorphic

mappings between C^* -algebras together with a newfangled investigation on orthogonality preserving pairs of operators between C^* -algebras are presented by J. J. Garcés et al. A study on linear maps between positive operators of Schatten p -classes ($1 < p < +\infty$) which preserve the p -norms of convex combinations is developed by D. L.-W. Kuo et al. New methods and results to solve systems of operator equations on Hilbert C^* -modules are given by X. Fang et al.

Y. Song et al. characterize all maps between von Neumann algebras that satisfy the equality $\Phi(ab - \xi ba) = \Phi(a)\Phi(b) - \xi\Phi(b)\Phi(a)$. M. A. Alghamdi et al. obtain basic properties of the solutions of the Q -lasso as a function of a tuning parameter γ . They also discuss iterative methods for solving the Q -lasso which include the proximal gradient algorithm and the projection-gradient algorithm. L. Yang et al. characterize, for a general field F and $m, n \geq 3$, maps of the form $\{f_{ij}\}$ from $M_{mn}(F)$ to itself that preserves similarity and those that preserves inverses.

Concerning the applications of the fixed point theorems and various techniques developed in preserver problems, H. Liu et al. establish some existence theorems for semilinear nonlocal functional differential equations. D.-G. Yang and J.-L. Liu study new subclasses of multivalent analytic functions associated with a linear operator. Moreover, T. Wang and F. Y. Lu obtain some new results on Lie triple derivations on standard subalgebras of lattice algebras.