

Title: Automorphisms on algebras of operator-valued Lipschitz maps

Author(s): María Burgos, A. Jiménez-Vargas and Moisés Villegas-Vallecillos

Let $\text{Lip}(X, \mathcal{B}(\mathcal{H}))$ and $\text{lip}_\alpha(X, \mathcal{B}(\mathcal{H}))$ ($0 < \alpha < 1$) be the big and little Banach *-algebras of $\mathcal{B}(\mathcal{H})$ -valued Lipschitz maps on X , respectively, where X is a compact metric space and $\mathcal{B}(\mathcal{H})$ is the C^* -algebra of all bounded linear operators on a complex infinite-dimensional Hilbert space $\mathcal{H}$. We prove that every linear bijective map that preserves zero products in both directions from $\text{Lip}(X, \mathcal{B}(\mathcal{H}))$ or $\text{lip}_\alpha(X, \mathcal{B}(\mathcal{H}))$ onto itself is biseparating. We give a Banach–Stone type description for the *-automorphisms on such Lipschitz *-algebras, and we show that the algebraic reflexivity of the *-automorphism groups of $\text{Lip}(X, \mathcal{B}(\mathcal{H}))$ and $\text{lip}_\alpha(X, \mathcal{B}(\mathcal{H}))$ holds for $\mathcal{H}$ separable.

Address:

María Burgos
Campus de Jerez
Facultad de Ciencias Sociales
y de la Comunicación
Av. de la Universidad s/n
11405 Jerez, Cádiz
Spain

Address:

A. Jiménez-Vargas
Departamento de Álgebra
y Análisis Matemático
Universidad de Almería
04120 Almería
Spain

Address:

Moisés Villegas-Vallecillos
Campus Universitario de Puerto Real
Facultad de Ciencias
11510 Puerto Real, Cádiz
Spain