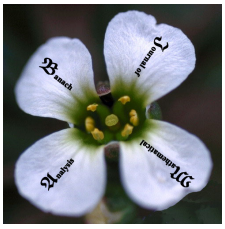

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DISJOINTNESS PRESERVING LINEAR OPERATORS BETWEEN BANACH ALGEBRAS OF VECTOR-VALUED FUNCTIONS

TAHER GHASEMI HONARY*, AZADEH NIKOU AND AMIR HOSSEIN SANATPOUR

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Abstract. We present vector-valued versions of two theorems due to A. Jimenez–Vargas, by showing that, if $B(X,E)$ and $B(Y,F)$ are certain vector-valued Banach algebras of continuous functions and $T : B(X,E) \to B(Y,F)$ is a separating linear operator, then $\widehat{T} : \widehat{B(X,E)} \to \widehat{B(Y,F)}$, defined by $\widehat{T}\hat{f} = \widehat{Tf}$, is a weighted composition operator, where $\widehat{Tf}$ is the Gelfand transform of Tf.

Furthermore, it is shown that, under some conditions, every bijective separating map $T : B(X,E) \to B(Y,F)$ is biseparating and induces a homeomorphism between the character spaces $M(B(X,E))$ and $M(B(Y,F))$. In particular, a complete description of all biseparating, or disjointness preserving linear operators between certain vector-valued Lipschitz algebras is provided. In fact, under certain conditions, if the bijections $T : Lip^{\alpha}(X,E) \to Lip^{\alpha}(Y,F)$ and T^{-1} are both disjointness preserving, then T is a weighted composition operator in the form $Tf(y) = h(y)(f(\phi(y)))$, where ϕ is a homeomorphism from Y onto X and h is a map from Y into the set of all linear bijections from E onto F. Moreover, if T is multiplicative then $M(E)$ and $M(F)$ are homeomorphic.

Department of Mathematics, kharazmi University (Tarbiat Moallem University), 50 Taleghani Avenue, 15618 Tehran, Iran.
E-mail address: honary@khu.ac.ir
E-mail address: std_nikou@khu.ac.ir
E-mail address: a_sanatpour@khu.ac.ir

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* Corresponding author.
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