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DYNAMICAL SYSTEM INDUCED BY TENSOR SUM TENSOR PRODUCT AND TOEPLITZ OPERATOR ON WEIGHTED CONTINUOUS AND LOCALLY CONVEX SPACE

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Abstract

This article studies we characterize dynamical system induced by tensor sum tensor product and toeplitz operator on weighted locally continuous and locally convex space of cross section $CV_0(G^2)$ (or $CV_b(G^2, E)$) and $LV_0(G^2)$ (or $LV_b(G^2)$) and holomorphic functions

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$\mathcal{H}V_0(G^2, E)$ (or $\mathcal{H}V_b(G^2, E)$) respectively.

1. Introduction

Let P denote the projection of $L^2(T)$ onto G^2. If $\psi \in L^{\infty}(T)$, then the toeplitz operator T_{ψ} because of the symbol ψ would it be the operator $T_{\psi} : G^2 \to G^2$ defined by $T_{\psi}(f) = p(\psi f), f \in G^2$. Let $A(G)$ be a Banach space of analytic function from on G. Let $\psi : Z \to \mathbb{C}$ represent a mapping. Then, for each $f \in A(G^2)$, the scalar multiplication produces a linear transformation M_{π} from $A(G^2)$ itself, defined as $M_{\pi} f = \pi f$, where the product of functions was also defined at the point-wise and is referred to as a multiplication operator on $A(G^2)$. Let G be the topological group such as e also as identity, Z also be topological space, but mostly $\pi : G \times Z \to Z$ also become a continuous map in which (a) $\pi(e, z) = z$ each as well as every $z \in Z.(b)$ $\pi(st, z) = \pi(s, \pi(t, z))$ for every $t, s \in G, z \in Z$. The triple (G, Z, π) is then regarded to someone as either a transformational organization, Every state space is defined by Z. A dynamical system is the corresponding transformation group if $G = (\mathcal{R}, +)$. The continuous dynamical system is known as the transformation group $(\mathcal{R}, Z, \pi)$. Whenever Z has become a Banach space and $\pi(t, \alpha z_1 + \beta z_2) = \alpha\pi(t, z_1) + \beta\pi(t, z_2)$ for $t \in \mathcal{R}, \alpha, \beta \in \mathbb{C}$, $z_1, z_2 \in Z$ then (R^+, Z, π) is referred to as a linear dynamic systems on Z. That whole manuscript is divided into ten sections. In section one, Introduction. The second of which is titled Dynamical system induced by Toeplitz operator on holomorphic function spaces. Section three contains the dynamical system induced by the Toeplitz operator on weighted cross-sectional spaces. Section four describes a dynamical system and the Toeplitz operator on a holomorphic function's weighted locally convex space. Section five discusses the dynamical system and the Toeplitz operator on the weighted continuous space of a holomorphic function. We obtained in Section six Tensor sum and Toeplitz operator on holomorphic function spaces induce a dynamical system. Section seven shows the dynamical system induced by a tensor sum as well as Toeplitz operator in weighted cross-sectional spaces. A dynamical system produced by a tensor sum but also Toeplitz operator on weighted cross-sectional spaces is presented in section eight. The dynamical system induced Tensor sum and Toeplitz operator on weighted continuous space of holomorphic function in section nine. In section ten, Tensor Product and Toeplitz Operator.

2. On Holomorphic Function Spaces, the Toeplitz Operator

Letting $\pi_\tau : G^2 \to \mathcal{R}$ be denoted by $\pi_\tau(z) = e^{th(z)}$ for any and all $t \in \mathcal{R}$ as well as $f \in G^2$, where $l \in \mathcal{H}_b(G^2, \mathcal{R})$ and $\| l \|_\infty = \sup\{\| l(z) \| : z \in G^2\}$. $\psi_t : \mathcal{R} \to \mathcal{R}$ is however described by $\psi_t(\omega) = t + \omega$ this self-map.

Theorem 1. *Allow* $\psi : G^2 \to G^2$ *as well as* $\pi_t : G^2 \to \mathcal{R}$ *to also be continuous functions. Therefore* $(T_\psi M_{\pi_t})(f)$ *has been bounded by each* $t \in \mathcal{R}, f \in \mathcal{A}(G^2)$.

Proof. $T_\psi M_{\pi_t}$ will be shown to be continuous also at origin We content that $T_\psi M_{\pi_t}(f) \subseteq \mathcal{A}$. We have, $\| (T_\psi M_{\pi_t})(f) \| = \sup \| T_\psi(f) \| \| M_{\pi_t}(f) \|$ for every $t \in \mathcal{R} \leq \| f \|$ as $t \to 0 \leq 1$. As a result, at the origin, $T_\psi M_{\pi_t}$ has been continuous. As a result, it was confirmed.

Theorem 2. *Let* $\mathcal{H}^\infty(G^2, \mathcal{A}(S))$ *also be space with continuous bounded functions through* G^2 *to* $\mathcal{A}(S)$, *as well as* $\mathcal{A}(S)$ *become the Banach algebra of the all the bounded linear operators on S. Let* $h_\alpha(\psi_{t\alpha})$ *on* $\mathcal{H}^\infty(G^2, \mathcal{A}(S))$ *converge at* $h(\psi_t)$, *and also let* f_α *be a sequence that converges to f in* $\mathcal{H}V_0(G^2, S)$. *Consequently, in* $\mathcal{H}V_0(G^2, S)$ *the products of* $f_\alpha h_\alpha(\psi_{t\alpha})$ *converges to* $fh(\psi_t)$.

Proof. Let $h_\alpha(\psi_{t\alpha})$ converges to $h(\psi_t)$ in $\mathcal{H}^\infty(G^2, \mathcal{A}(S))$. Then $\| f_n h_n(\psi_{t_n}) - fh(\psi_t) \|_s \leq \| h_n(\psi_{t_n}) - h(\psi_t) \| \| f_n \|_s + \| h(\psi_t) \|_s \| f_n - f \|_s \to 0$ as $\| h_n(\psi_{t_n}) - h(\psi_t) \|_\infty \to 0$ and $\| f_n - f \|_\infty \to 0$.

Theorem 3. *Consider* $\nabla : \mathcal{R} \times G(\mathcal{R}) \to G(\mathcal{R})$ *become the function defined by* $\nabla(t, f) = (T_{\psi t} M_{\pi_t})(f)$ *for each and every* $t \in \mathcal{R}$ *and* $f \in G(\mathcal{R})$. *Then on*

$G(\mathcal{R})$, there is still a linear dynamical system $G(\mathcal{R})$.

Proof. During $T_{\psi_t} M_{\pi_t}$ would be a type of Toeplitz operator on $G(\mathcal{R})$ each and every $t \in \mathcal{R}$ furthermore $f \in G(\mathcal{R})$. It is clear to observe that $\nabla(0, f) = f$ and $\nabla(t+s, f) = \nabla(t, \nabla(s, f))$. As a result, to demonstrate this, $\nabla(t, f)$ is a dynamical system on $G(\mathcal{R})$, it is sufficient to establish that ∇ is continuous. Let (t_α, f_α) be a net in $\mathcal{R} \times G(\mathcal{R})$ such that $(t_\alpha, f_\alpha) \to (t, f)$. We shall show that $\nabla(T_\alpha, f_\alpha) \to \nabla(t, f)$. Then $\| \nabla(t_\alpha, f_\alpha) \to \nabla(t, f) \| \to 0$ as $| t_\alpha - t | \to 0$ and $\psi_{t\alpha} \to \psi_t$. Therefore $\nabla(t, f)$ is a dynamical system on $G(\mathcal{R})$.

Theorem 4. *It is assumed that $T_\psi : \mathcal{A}(G^2) \to \mathcal{A}(G^2)$ and $\pi_t : G^2 \to \mathbb{C}$ represent continuous functions. Consequently $M_{\pi_t} T_\psi(f)$ is bounded for every $t \in \mathcal{R}, f \in \mathcal{A}(G^2)$.*

Proof. We will demonstrate that $M_{\pi_t} T_\psi$ has become a continuous function at the origin. Authors assert that $M_{\pi_t} T_\psi(f) \subseteq \mathcal{A}$. We can write $\| (M_{\pi_t} T_\psi)(f) \| \le \| f \|$ as $t \to 0 \le 1$. $M_{\pi_t} T_\psi$ is thus continuous at the origin. As a result, it has been established.

Theorem 5. *Assume $\nabla : \mathcal{R} \times G(\mathcal{R}) \to G(\mathcal{R})$ is still this functional described as $\nabla(t, f) = (M_{\pi_t} T_\psi)(f)$ for each and every $t \in \mathcal{R}$ and $f \in G(\mathcal{R})$. ∇, would be a linear dynamical system.*

Proof. Because $M_{\pi_t} T_\psi$ has become a Toeplitz operator on $G(\mathcal{R})$ with every $t \in \mathcal{R}$ and $f \in G(\mathcal{R})$. This becomes obvious because $\nabla(0, f) = f$ and $\nabla(t+s, f) = \nabla(t, \Delta(s, f))$. Therefore, To demonstrate that either $\nabla(t, f)$ has become a dynamical system over $G(\mathcal{R})$, it is sufficient to demonstrate that ∇ has been continuous. Allow (t_α, f_α) to have become a cover though the $\mathcal{R} \times G(\mathcal{R})$ as well as $(t_\alpha, f_\alpha) \to (t, f)$. We shall show that $\nabla(t_\alpha, f_\alpha) \to \nabla(t, f)$. Then $\nabla(t, f)$ is a dynamical system on $G(\mathcal{R})$. Because, according to theorem 3.

3. Toeplitz Operator Inducted Dynamic System on Weighted Space of Cross Section

Assume G^2 is a topological space with hausdorff properties. The vector-vibration over G^2 is still a pair $(G^2, (F_{z_2}))_{z_1 \in \mathcal{H}^2}$, at which F_{z_2} has become such a vector space over $\mathbb{K}$ where $\mathbb{K}$ is the field (where $\mathbb{K} = \mathcal{R}\,(\text{or})\,\mathbb{C}$). Any member of the Cartesian product $\prod_{z_1 \in \mathcal{H}^2} F_{z_2}$ is then a cross section across G^2. $\prod_{z_1 \in \mathcal{H}^2} F_{z_2}$ is the Cartesian product. $\prod_{z_1 \in \mathcal{H}^2} F_{z_2}$ is converted to either a vector space as usual, but any vector subspace with $\prod_{z_1 \in \mathcal{H}^2} F_{z_2}$ is through concept such a vector space of cross-section over G^2. The weight on G^2 would be a function ν on G^2 so that those $v(x)$ is indeed a semi-norm on F_{z_2} for every $Z_1 \in G^2$, $v_{z_1} \le u_{z_1}$ for each $v_{z_1} \le u_{z_1}$ was that we mean as $v \le u$. The set v containing weights on G^2 is said to be directed if G^2 exists such that $\lambda u \le w$ and $\lambda v \le w$ for any combination $v, u \in V$ and $\lambda > 0$. Following the assumption that a certain pair of weights was directed, Those who type $v > 0$, as a result of this, $Z_1 \in G^2$ and $Z_2 \in F_{z_2}$. There are several at $v \in V$ which $v_{z_1}(z_2) > 0$. The system of weights on G^2 will be referred to as a set V of weights G^2 that also fulfills $V > 0$. While f is indeed a cross-section across G^2 and v is a weights on G^2, then the positive-valued function is G^2 that takes z_1 into $v_{z_1}[f(z_2)]$ is represented as $v[f]$. The vector space of cross-section over G^2 is denoted as $L(G^2)$. Each weighted space with cross-section over G^2 to regard to quality of weights v an G^2 is as follows: with any $v \in V$, $LV_0(G^2) = \{f \in L(G^2) : v[f]\}$ is upper semi-continuous but vanishes with infinity for G^2 and $LV_b(G^2) = \{f \in L(G^2) : v[f]\}$ is bounded function on G^2 for every $v \in V\}$. Moreover $LV_0(G^2)$ as well as $LV_b(G^2)$ were also vector spaces, as well as

$LV_b(G^2) \subseteq LV_b(G^2)$ were indeed vector spaces. Because unless authors put $\| f \|_v = \sup\{v[f(z)] : z \in G^2\}$ besides $v \in V$ and $f \in L(G^2)$, then can $\| \cdot \|_v$ also be known as semi on any side $LV_0(G^2)$ or $LV_b(G^2)$ but also. On some of these spaces, the $\{\| \cdot \|_v : v \in V\}$ Family of semi-norms will provide a Hausdorff locally convex topology. l_v Specifies each weighted locally convex space with cross-section, and also the vector space endowed of l_v is known as the weighted locally convex space of cross-section vector space. So even though V would be a directed set with weights, l_v also has closed absolutely convex neighborhood with either a basis of both the form $B_v = \{f \in LV_b(G^2) : f \in LV_0(G^2)$ such that $\| f \|_v \leq 1\}$.

Theorem 1. *Let* $\psi : G^2 \to G^2$ *and* $\pi_t : G^2 \to \mathbb{C}$ *represent continuous functions. Then for each* $t \in \mathcal{R}$, $f \in LV_0(G^2)$, $(T_\psi M_{\pi_t})(f)$ *is bounded* [1].

Theorem 2. *Let* $L^\infty(G^2, \mathcal{A}(S))$ *also be space with continuous bounded functions through* G^2 to $\mathcal{A}(S)$, *as well as* $\mathcal{A}(S)$ *become the Banach algebra of the all the bounded linear operators on* S. *Let* $h_\alpha(\psi_{t\alpha})$ *on* $L(G^2, \mathcal{A}(S))$ *converge at* $h(\psi_t)$, *and also let* f_α *be a sequence that converges to f in* $LV_0(G^2, S)$. *Consequently, in* $LV_0(G^2, S)$, *the products of* $f_\alpha h_\alpha(\psi_{t\alpha})$ *converges to* $fh(\psi_t)$ [5].

Theorem 3. *Consider* $\nabla : \mathcal{R} \times LV_0(\mathcal{R}) \to LV_0(\mathcal{R})$ *become the function defined by* $\nabla(t, f) = (T_{\psi t} M_{\pi_t})(f)$ *for each and every* $t \in \mathcal{R}$ *as well as* $f \in LV_0(\mathcal{R})$. *Then on* $LV_0(\mathcal{R})$ *there is still a linear dynamical system on* $LV_0(\mathcal{R})$ [6].

Theorem 4. *It is assumed that* $T_\psi : \mathcal{A}(G^2) \to \mathcal{A}(G^2)$ *and* $\pi_t : G^2 \to \mathbb{C}$ *represent continuous functions. Consequently* $M_{\pi_t} T_\psi(f)$ *is bounded for every* $t \in \mathcal{R}$, $f \in LV_0(G^2)$ [9].

Theorem 5. *Assume* $\nabla : \mathcal{R} \times LV_0(\mathcal{R}) \to LV_0(\mathcal{R})$ *is indeed the function* *defined by* $\nabla(t, f) = (M_{\pi_t} T_{\psi t})(f)$ *for every* $t \in \mathcal{R}$ *and* $f \in LV_0(\mathcal{R})$. *Then* ∇ *is a linear dynamical system on* $LV_0(\mathcal{R})$ [1].

Note 6. All of the conclusions for this section hold true. substitute $LV_b(G^2, E)$ for $LV_0(G^2, E)$.

4. Dynamical System and The Toeplitz Operator on the Weighted Continuous Space of Holomorphic Function

Consider G^2 has become a topological space. Consider that S has become a topological vector space and even that $\mathcal{H}(G^2, S)$ is a collection of holomorphic functions spanning G^2 to S. Using G^2, Consider the collection with non-negative upper-semi continuous functions denoted by V. Whenever V may be a collection of weights over G^2 then there exists certain $v \in G^2$ for which $v(x) > 0$ for any $z \in G^2$, $v(x) > 0$ is what we write. There existed $v \in V$ within which $\alpha u_i \leq v$ (point-wise on G^2) for $i = 1, 2$ whether there's a pair u_1, u_2 in V as well as $v > 0$. The Vf weights for G^2 are thought to have been pointing upwards. The system of weights was defined as some set V containing weights on G^2 that also fulfils $V > 0$. The set with all continuous functions over G^2 to S is denoted by $cs(S)$. Whenever V may be a weighting system on G^2, otherwise, every weighted topological system (G^2, V) would be affiliated with a weighted topological system (G^2, V) and the pair (G^2, V) would be a weighted topological system. Those who have indeed weighted spaces with $\mathcal{H}V_0(G^2, S) = \{f \in \mathcal{H}(G^2, S) : vf$ vanish at infinity of G^2 for each $v \in V\}$ and $\mathcal{H}V_b(G^2, S) = \{f \in \mathcal{H}(G^2, S) : vf(x)$ is bounded in S for $v \in V\}$.

Letting $v \in V, q \in cs(S)$ consequently $f \in \mathcal{H}(G^2, S)$. If we define, Then, $\|\cdot\|_v$ can be considered a semi-norm from either $\mathcal{H}V_0(G^2)$ or $\mathcal{H}V_b(G^2)$ and the family of semi-norms. $\{\|\cdot\|_v : v \in V, q \in cs(S)\}$ Represents a Hausdorff locally convex topological on all these spaces. one of every topology is represented with w_v and a weighted locally convex space of vector-valued holomorphic functions is represented as $\mathcal{H}V_0(G^2, S)$ or $\mathcal{H}V_b(G^2, S)$ endowed with w_v Throughout the form $\mathcal{B}_{v, q} = \{f \in \mathcal{H}V_b(G^2, S)$ $: \| f \|_{v, q} \leq 1\}$, it already has a closed absolutely convex neighborhoods of both the origin because its basis. Also, $\mathcal{H}V_0(G^2, S)$ is a closed subspaces of $\mathcal{H}V_0(G^2, S)$.

5. Dynamical System Induced by Toeplitz Operator on Weighted Continuous Function Spaces

Theorem 1. *Letting* $\psi : G^2 \to G^2$ *consequently* $\pi_t : G^2 \to \mathbb{C}$ *represent continuous functions. Then for each* $t \in \mathcal{R}, f \in CV_0(G^2), (T_\psi M_{\pi_t})(f)$ *is bounded* [1].

Theorem 2. *Let* $C^\infty(G^2, \mathcal{A}(S))$ *also be space with continuous bounded functions through* G^2 to $\mathcal{A}(S)$, *as well as* $\mathcal{A}(S)$ *become the Banach algebra of the all the bounded linear operators on S. Let* $h_\alpha(\psi_{t\alpha})$ *on* $C^\infty(G^2, \mathcal{A}(S))$ *converge at* $h(\psi_t)$, *and also let* f_α *be a sequence that converges to f in* $CV_0(G^2, S)$. *Consequently, in* $CV_0(G^2, S)$, *the products of* $f_\alpha h_\alpha(\psi_{t_\alpha})$ *converges to* $fh(\psi_t)$ [5].

Theorem 3. *Consider* $\nabla : \mathcal{R} \times CV_0(\mathcal{R}) \to CV_0(\mathcal{R})$ *become the function defined by* $\nabla(t, f) = (T_{\psi t} M_{\pi_t})(f)$ *for each and every* $t \in \mathcal{R}$ *and* $f \in CV_0(\mathcal{R})$. *Then on* ∇, *there is still a linear dynamical system* $CV_0(\mathcal{R})$ [6].

Theorem 4. *It is assumed that* $T_\psi : \mathcal{A}(G^2) \to \mathcal{A}(G^2)$ *and* $\pi_t : G^2 \to \mathcal{R}$ *represent continuous functions. Consequently* $(M_{\pi_t} T_\psi)(f)$ *is bounded for every* $t \in \mathcal{R}, f \in CV_0(G^2)$ [9].

Theorem 5. *Assume* $\nabla : \mathcal{R} \times CV_0(\mathcal{R}) \to CV_0(\mathcal{R})$ *is indeed the function* *defined by* $\nabla(t, f) = (M_{\pi_t}, T_{\psi t})(f)$ *for every* $t \in \mathcal{R}$ *and* $f \in CV_0(\mathcal{R})$. *Then* ∇ *is a linear dynamical system on* $CV_0(\mathcal{R})$ [1].

Note 6. All of the conclusions for this section hold true. Substitute $CV_b(G^2, S)$ for $CV_b(G^2, S)$ [8].

6. Tensor Sum and Toeplitz Operator Induced Dynamical System on Weighted Continuous and Locally Convex Space

Consider Z_1 and Z_2 to be Banach spaces, and $\mathcal{H}(Z_1, Z_2)$ being the space of all holomorphic functions from Z_1 to Z_2. If $Z_1 = Z_2$ we compose $\mathcal{H}(Z_1)$ for $\mathcal{H}(Z_1, Z_2)$. Then, for every $f \in \mathcal{H}(Z_1, Z_2)$, each mapping $\psi : Z_1 \to Z_1$ generates a linear transformation C_ψ from $\mathcal{H}(Z_1, Z_2)$, described as $C_\psi f = f \circ \psi$, and that it is referred to as a composition operator on $\mathcal{H}(Z_1, Z_2)$ induced by ψ. Let $\pi : Z_1 \to C$ represent a mapping. The scalar multiplication produces the linear transformation M_π from $\mathcal{H}(Z_1, Z_2)$ on its own, defined as $M_\pi f = \pi f$, for every $f \in \mathcal{H}(Z_1, Z_2)$, where its product with function has been defined point-wise and is referred to it as a multiplication operator on $\mathcal{H}(Z_1, Z_2)$. On continuous and holomorphic function spaces, R. K. Singh and J. S. Manhas investigated dynamical systems generated by multiplication but also composition operators. For further information, see [8, 9, 10, 11, 20]. Assume Z_1 is a non-zero complex Banach space. Now, for $f_1, f_2 \in \mathcal{H}(Z_1, Z_2)$, those who possess $\| f_1 \boxplus f_2 \| = \sup\{\| f_1(z_1) \| + \| f_1(z_2) \|$ $: z_1 \in Z_1$ and $z_2 \in Z_2\}$. It seems to have a foundation of closed absolutely convex neighborhoods about an origin of either the form $A = \{f_1 \boxplus f_2 : f_1, f_2 \in \mathcal{H}(Z_1, Z_2) \ni \| f_1 \boxplus f_2 \| \le 1\}$.

7. Tensor Sum and Toeplitz Operator on Holomorphic Function Spaces

Theorem 1. *Let* $\psi : G^2 \to G^2$ *and* $\pi_t : G^2 \to \mathcal{R}$ *be a continuous functions. Then* $(T_\psi \boxplus M_{\pi_t})(f_1 \boxplus f_2)$ *is bounded for every* $t \in R$, $f_1 \boxplus f_2$ $\in \mathcal{A}(G^2) \boxplus \mathcal{A}(G^2)$.

Proof . We will demonstrate this $T_\psi \boxplus M_{\pi_t}$ is continuous only at origin. We assert that $(T_\psi \boxplus M_{\pi_t})(f_1 \boxplus f_2) \subseteq \mathcal{A}$. We have $\| (T_\psi \boxplus M_{\pi_t})(f_1 \boxplus f_2) \| \leq \| (f_1 \boxplus f_2)(z_1 \boxplus z_2) \|$ as $t \to 0 \leq 1$. As a result, $T_\psi \boxplus M_{\pi_t}$ would be continuous only at origin.

Theorem 2. *Let $\mathcal{H}^\infty(G^2, \mathcal{A}(S))$ also be space with continuous bounded functions through G^2 to $\mathcal{A}(S)$, as well as $\mathcal{A}(S)$ become the Banach algebra of the all the bounded linear operators on S. Let $h_\alpha(\psi_{t\alpha})$ on $\mathcal{H}^\infty(G^2, \mathcal{B}(S))$ converge at $h(\psi_t)$, and also let f_α be a sequence that converges to f in $\mathcal{H}V_0(G^2, S)$. Consequently, in $\mathcal{H}V_0(G^2, S) \boxplus \mathcal{H}V_0(G^2, S)$ the products of $f_\alpha h_\alpha(\psi_{t_\alpha})$ converges to $fh(\psi_t)$.*

Proof. Let $h_\alpha(\psi_{t\alpha})$ converges to $h(\psi_t)$, in $\mathcal{H}(G^2, \mathcal{A}(S))$. Then $\| f_n h_n(\varphi_{tn}) - fh(\psi_t) \|_S \to 0$ as $\| h_n(\psi_{tn}) - h(\psi_t) \|_\infty \to 0$ and $\| f_n - f \|_\infty \to 0$.

Theorem 3. *Consider $\nabla : \mathcal{R} \times G(\mathcal{R}) \boxplus G(\mathcal{R}) \to G(\mathcal{R}) \boxplus G(\mathcal{R})$ become the function defined by $\nabla(t, f_1 \boxplus f_2) = (T_{\psi t} \boxplus M_{\pi_t})(f_1 \boxplus f_2)$ for each and every $t \in \mathcal{R}$ and $f_1 \boxplus f_2 \in G(\mathcal{R}) \boxplus G(\mathcal{R})$. Then on ∇, there is still a linear dynamical system $G(\mathcal{R}) \boxplus G(\mathcal{R})$.*

Proof. During $T_\psi \boxplus M_{\pi_t}$ would be a type of Tensor sum and Toeplitz operator on $G(\mathcal{R}) \boxplus G(\mathcal{R})$ each and every $t \in \mathcal{R}$ furthermore $f_1 \boxplus f_2 \in G(\mathcal{R}) \boxplus G(\mathcal{R})$. It is clear to observe that $\nabla(0, f_1 \boxplus f_2) = f_1 \boxplus f_2$ and $\nabla(t + s, f_1 \boxplus f_2) = \nabla(t, \Delta(s, f_1 \boxplus f_2)))$. As a result, to demonstrate this, $\nabla(t, f_1 \boxplus f_2)$ is a dynamical system on $G(\mathcal{R}) \boxplus G(\mathcal{R})$, it is sufficient to establish that ∇ is continuous. Let $(t_\alpha, f_{1_\alpha} \boxplus f_{2_\alpha})$ be a net in $\mathcal{R} \times G(\mathcal{R}) \boxplus G(\mathcal{R})$, such that $(t_\alpha, f_{1_\alpha} \boxplus f_{2_\alpha}) \to (t, f_1 \boxplus f_2)$. $\| \nabla(t_\alpha, f_{1_\alpha} \boxplus f_{2_\alpha}) - \nabla(t, f \boxplus g) \| \to 0$ as $| t_\alpha - t | \to 0$ and $\psi_{t\alpha} \to \psi_t$. Therefore $\nabla(t, f_1 \boxplus f_2)$ is a dynamical system on $G(\mathcal{R}) \boxplus G(\mathcal{R})$.

Theorem 4. *Allow $T_\psi : \mathcal{A}(G^2) \to \mathcal{A}(G^2)$ and $\pi_t : G^2 \to \mathbb{C}$ to be* *continuous functions. Then* $(M_{\pi_t} \boxplus T_{\psi})(f_1 \boxplus f_2)$ *was also bounded for each and every* $t \in \mathcal{R}$, $f_1 \boxplus f_2 \in \mathcal{A}(G^2) \boxplus \mathcal{A}(G^2)$.

Proof. We will demonstrate that $M_{\pi_t} \boxplus T_{\psi}$ is continuous only at origin. However we still assert that $M_{\pi_t} \boxplus T_{\psi}(f_1 \boxplus f_2) \subseteq \mathcal{A}$. We have $\| M_{\pi_t} \boxplus T_{\psi}(f_1 \boxplus f_2) \| = \sup \| M_{\pi_t}(f_1) \| \| T_{\psi}(f_2) \|$ for every $t \in \mathcal{R} = \sup$ $\| \pi_t(z_1) f_1(z_1) \| \| P(\psi f_2)(z_2) \|$ for every $z_1 \boxplus z_2 \in \mathcal{A}(G^2) \boxplus \mathcal{A}(\mathcal{H}^2) \leq 1$ As a result, $M_{\pi_t} \boxplus T_{\psi}$ is continuous at the origin. As a result, verified.

Theorem 5. *Letting* $\nabla : \mathcal{R} \times G(\mathcal{R}) \boxplus G(\mathcal{R}) \to G(\mathcal{R}) \boxplus G(\mathcal{R})$ *is still this functional described as* $\nabla(t, f_1 \boxplus f_2) = (M_{\pi_t} \boxplus T_{\psi t})(f_1 \boxplus f_2)$ *for every* $t \in \mathcal{R}$ *and* $f_1 \boxplus f_2 \in G(\mathcal{R}) \boxplus G(\mathcal{R})$. *Finally, under* $G(\mathcal{R}) \boxplus G(\mathcal{R}), \nabla$ *would be a linear dynamical system*.

Proof. Because $M_{\pi_t} \boxplus T_{\psi_t}$ has become a Tensor sum and Toeplitz operator on $G(\mathcal{R}) \boxplus \oplus G(\mathcal{R})$ with every $t \in \mathcal{R}$ and $f_1 \boxplus f_2 \in G(\mathcal{R}) \boxplus G(\mathcal{R})$. This becomes obvious because $\nabla(0, f_1 \boxplus f_2) = f_1 \boxplus f_2$ and $\nabla(t + s, f_1 \boxplus f_2)$ $= \nabla(t, \nabla(s, f_1 \boxplus f_2))$. Therefore, To demonstrate that either $\nabla(t, f_1 \boxplus f_2)$ has become a dynamical system over $G(\mathcal{R}) \boxplus G(\mathcal{R})$, it is sufficient to demonstrate that ∇ has been continuous. Allow $(t_\alpha, f_{1_\alpha} \boxplus f_{2_\alpha})$ to have become a cover though the $\mathcal{R} \times G(\mathcal{R}) \boxplus G(\mathcal{R})$ as well as $(t_\alpha, f_{1_\alpha} \boxplus f_{2_\alpha}) \to (t, f_1 \boxplus f_2)$. We shall show that $\nabla(t_\alpha, f_{1_\alpha} \boxplus f_{2_\alpha}) \to \nabla(t, f_1 \boxplus f_2)$. Then $\nabla(t, f_1 \boxplus f_2)$ is a dynamical system on $G(\mathcal{R}) \boxplus G(\mathcal{R})$. Because, as explained throughout theorem 3.

8. Tensor Sum and Toeplitz Operator Induced Dynamical System on Weighted Spaces of Cross Section

Throughout this section, we characterize the scalar-valued, vector-valued, and operator-valued mappings which it generates each operator as $LV_b(G^2, S)$ on $LV_0(G^2, S)$. Some of the results obtained will be generalized towards the weighted space of cross-section. Each foregoing theorem distinguishes each scalar-valued mapping $\pi_t : G^2 \to \mathcal{R}$ something that provokes its tensor sum operator on $LV_0(G^2, S)$ [3].

Theorem 1. *Let* $\psi : G^2 \to G^2$ *and* $\pi_t : G^2 \to \mathcal{R}$ *be a continuous functions. Then* $(T_\psi \boxplus M_{\pi_t})(f_1 \boxplus f_2)$ *is bounded for every* $t \in \mathcal{R}$, $f_1 \boxplus f_2 \in LV_0(G^2) \boxplus LV_0(G^2)$ [3].

Theorem 2. *Let* $L^\infty(G^2, \mathcal{A}(S))$ *also be space with continuous bounded functions through* G^2 *to* $\mathcal{A}(S)$, *as well as* $\mathcal{A}(S)$ *become the Banach algebra of the all the bounded linear operators on E. Letting* $h_\alpha(\psi_{t\alpha})$ *on* $L^\infty(G^2, \mathcal{A}(S))$ *converge at* $h(\psi_t)$, *and also let* f_α *be a sequence that converges to f in* $LV_0(G^2, S)$. *Consequently, in* $LV_0(G^2, S) \boxplus LV_0(G^2, S)$ *the products of* $f_\alpha h_\alpha(\psi_{t\alpha})$ *converges to* $fh(\psi_t)$ [5].

Theorem 3. *Letting* $\nabla : \mathcal{R} \times LV_0(\mathcal{R}) \boxplus LV_0(\mathcal{R}) \to LV_0(\mathcal{R}) \boxplus LV_0(\mathcal{R})$ *become the function that is specified as* $\nabla(t, f_1 \boxplus f_2) = (T_{\psi t} \boxplus M_{\pi_t})(f_1 \boxplus f_2)$ *about each as well* $t \in \mathcal{R}$ *as* $f_1 \boxplus f_2 \in LV_0(\mathcal{R}) \boxplus LV_0(\mathcal{R})$. *After that would be a linear dynamical system on* $LV_0(\mathcal{R}) \boxplus LV_0(\mathcal{R})$ [3].

Theorem 4. *Consider* $T_\psi : \mathcal{A}(G^2) \to \mathcal{A}(G^2)$ *and* $\pi_t : G^2 \to \mathbb{C}$ *to be continuous functions. After this* $(M_{\pi_t} \boxplus T_{\psi t})(f_1 \boxplus f_2)$ *has been bounded in each* $t \in \mathcal{R}$, $f_1 \boxplus f_2 \in LV_0(\mathcal{R}) \boxplus LV_0(G^2)$ [3].

Theorem 5. *Letting* $\nabla : \mathcal{R} \times LV_0(\mathcal{R}) \boxplus LV_0(\mathcal{R}) \to LV_0(\mathcal{R}) \boxplus LV_0(\mathcal{R})$ *become the function defined by* $\nabla(t, f_1 \boxplus f_2) = (M_{\pi_t} \boxplus T_{\psi t})(f_1 \boxplus f_2)$ *for each and every* $t \in \mathcal{R}$ *and* $f_1 \boxplus f_2 \in LV_0(\mathcal{R}) \boxplus LV_0(\mathcal{R})$. *However* ∇ *is a linear dynamical system on* $LV_0(\mathcal{R}) \boxplus LV_0(\mathcal{R})$ [3].

Note 6. Several of the results in this section hold true when $LV_b(G^2, S)$ has been restored with $LV_0(G^2, S)$ [3].

9. Tensor Sum and Toeplitz Operator on Weighted Locally Convex Space of Holomorphic Functions Induced by a Dynamical System

Theorem 1. *Let* $\mathcal{H}^{\infty}(G^2, \mathcal{A}(S))$ *also be space with continuous bounded functions through* G^2 *to* $\mathcal{A}(S)$, *as well as* $\mathcal{A}(S)$ *become the Banach algebra of the all the bounded linear operators on S. Let* $h_{\alpha}(\psi_{t\alpha})$ *on* $\mathcal{H}^{\infty}(G^2, \mathcal{A}(S))$ *converge at* $h(\psi_t)$ *and also let* f_{α} *be a sequence that converges to f in* $\mathcal{H}V_0(G^2, S)$. *Consequently, in* $\mathcal{H}V_0(G^2, E) \boxplus \mathcal{H}V_0(G^2, S)$ *the products of* $f_{\alpha}h_{\alpha}(\psi_{t\alpha})$ *converges to* $fh(\psi_t)$ [5].

Theorem 2. *Let* $\nabla : \mathcal{R} \times \mathcal{H}V_0(\mathcal{R}) \boxplus \mathcal{H}V_0(\mathcal{R}) \to \mathcal{H}V_0(\mathcal{R}) \boxplus \mathcal{H}V_0(\mathcal{R})$ *has become the function defined by* $\nabla(t, f_1 \boxplus f_2) = (T_{\psi t} \boxplus M_{\pi_t})(f_1 \boxplus f_2)$ *about each* $t \in \mathcal{R}$ *as well as* $f \in LV_0(\mathcal{R})$. *After that* ∇ *would be a linear dynamical system on* $\mathcal{H}V_0(\mathcal{R})$ [6].

Theorem 3. *Assume* $T_{\psi} : \mathcal{A}(G^2) \to \mathcal{A}(G^2)$ *and* $\pi_t : G^2 \to \mathcal{R}$ *be a continuous functions. Then* $(M_{\pi_t} \boxplus T_{\psi t})(f_1 \boxplus f_2)$ *has been bounded with each* $t \in \mathcal{R}$, $f_1 \boxplus f_2 \in \mathcal{H}V_0(\mathcal{R}) \boxplus \mathcal{H}V_0(\mathcal{R})$ [11].

Theorem 4. *Assume* $\nabla : \mathcal{R} \times \mathcal{H}V_0(\mathcal{R}) \boxplus \mathcal{H}V_0(\mathcal{R}) \to \mathcal{H}V_0(\mathcal{R}) \boxplus \mathcal{H}V_0(\mathcal{R})$ *is indeed the function as described by* $\nabla(t, f_1 \boxplus f_2) = (M_{\pi_t} \boxplus T_{\psi t})(f_1 \boxplus f_2)$ *for each and every* $t \in \mathcal{R}$ *and* $f_1 \boxplus f_2 \in \mathcal{H}V_0(\mathcal{R}) \boxplus \mathcal{H}V_0(\mathcal{R})$. ∇, *across the other hand, would be a linear dynamical system from the* $\mathcal{H}V_0(\mathcal{R}) \boxplus \mathcal{H}V_0(\mathcal{R})$ [11].

Note 5. Several of the results in that section are valid when $\mathcal{H}V_b(G^2, E)$ is replaced by $\mathcal{H}V_0(G^2, E)$ [11].

10. Dynamical System Induced by Tensor Sum and Toeplitz Operator on Weighted Continuous Function Spaces

Theorem 1. *Let* $\psi : G^2 \to G^2$ *and* $\pi_t : S^2 \to \mathcal{R}$ *be a continuous* *functions. Then* $(T_{\psi} \boxplus M_{\pi_t})(f_1 \boxplus f_2)$ *is bounded for every* $t \in \mathcal{R}$, $f_1 \boxplus f_2 \in CV_0(G^2) \boxplus CV_0(G^2)$ [13].

Theorem 2. *Let* $C^{\infty}(G^2, \mathcal{A}(S))$ *also be space with continuous bounded functions through* G^2 *to* $\mathcal{A}(S)$, *as well as* $\mathcal{A}(S)$ *become the Banach algebra of the all the bounded linear operators on E. Let* $h_{\alpha}(\psi_{t\alpha})$ *on* $C^{\infty}(G^2, \mathcal{A}(S))$ *converge at* $h(\psi_t)$, *and also let* f_{α} *be a sequence that converges to f in* $CV_0(G^2, S)$. *Consequently, in* $CV_0(G^2, S) \boxplus CV_0(G^2, S)$ *the products of* $f_{\alpha} h_{\alpha}(\psi_{t\alpha})$ *converges to* $fh(\psi_t)$ [13].

Theorem 3. *Let* $\nabla : \mathcal{R} \times CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R}) \to CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R})$ *has become the function defined by* $\nabla(t, f_1 \boxplus f_2) = (T_{\psi t} \boxplus M_{\pi_t})(f_1 \boxplus f_2)$ *about each* $t \in \mathcal{R}$ *as well as* $f_1 \boxplus f_2 \in CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R})$. *After that* ∇ *would be a linear dynamical system on* $CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R})$ [13].

Theorem 4. *Assume* $T_{\psi} : \mathcal{A}(G^2) \to \mathcal{A}(G^2)$ *and* $\pi_t : G^2 \to \mathbb{C}$ *to be continuous functions. After this* $(M_{\pi_t} \boxplus T_{\psi})(f_1 \boxplus f_2)$ *has been bounded in each* $t \in \mathcal{R}$, $f_1 \boxplus f_2 \in CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R})$ [13].

Theorem 5. *Assume* $\nabla : \mathcal{R} \times CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R}) \to CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R})$ *indeed the function as described by* $\nabla(t, f_1 \boxplus f_2) = (M_{\pi_t} \boxplus T_{\psi t})(f_1 \boxplus f_2)$ *for each and every* $t \in \mathcal{R}$ *and* $f_1 \boxplus f_2 \in CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R})$. ∇, *across the other hand, would be a linear dynamical system from the* $CV_0(\mathcal{R}) \boxplus CV_0(\mathcal{R})$ [13].

Note 6. Several of the results in this section hold true when $CV_b(G^2, S)$ has been restored with $CV_0(G^2, S)$ [3].

11. Tensor Product and Toeplitz Operator

Consider Z_1 and Z_2 be complex Banach spaces with non-zero dimensions. Among all $(m, n) \in Z_1 \otimes Z_2$ each unique tensor product of $Z_1 \in Z_1$ and $Z_2 \in Z_2$ would be a conjugate bilinear functional

$Z_1 \otimes Z_2 \to C$ described with $(Z_1 \otimes Z_2)(m, n) = \langle x; m\rangle \langle y; n \rangle$. This tensor product space seems to be the completion of just the inner product space, that is a Hilbert space having regard to that same inner product, as well as consisted essentially all(finite) sums from single tensors $\langle \sum_i (z_{1_i} \otimes z_{2_i}) \sum_j (h_j \otimes z_i) \rangle = \sum_i \sum_j \langle z_{1_i}; h_j \rangle \langle z_{2_i}; h_j \rangle$ for all $\sum_i (z_{1_i} \otimes z_{2_i})$ and $\sum_j (h_j \otimes z_i) \in Z_1 \otimes Z_2$. Each norm of $Z_1 \otimes Z_2$ would be determined by that of the inner product specified above). They refer to a limited linear transformation involving Z_1 in to the itself as the only operator on either a normed space Z_1. Letting $B[Z_1]$ become the normed algebra including all operators in Z_1 (provided with either the induced uniform norm).The transformation $Z_1 \otimes Z_2$ represented with $(P \otimes Q) \sum_i z_{1_i} \otimes z_{2_i} = \sum_i A_{z_{1_i}} \otimes B_{z_{2_i}}$ for all $\sum_i z_{1_i} \otimes z_{2_i} \in Z_1 \otimes Z_2$, Which is indeed an operator in $Q[Z_1 \otimes Z_2]$ has been the tensor product as well as Toeplitz with two operators P and Q on Z_1 and Z_2 What about an article that discusses basic fundamental features with tensor products [2, 3]. Now for $(Z_1 \otimes Z_2)$, we have $\| f_1 \otimes f_2 \| = \sup \{\| f_1(z_1) \| \| f_2(z_2) \| : z_1 \in Z_1 \text{ and } z_2 \in Z_2\}$. Then it has basis of closed absolutely convex neighborhoods of the origin of the form $Q = \{f_1 \otimes f_2 : f_1, f_2 \in H(Z_1, Z_2) \ni \| f_1 \otimes f_2 \| \leq 1\}$.

12. Tensor Product and Toeplitz Operator on Holomorphic Function Spaces

Theorem 1. *Let* $\psi : G^2 \to G^2$ *and* $\pi_t : G^2 \to \mathcal{R}$ *be a continuous functions. Then* $(T_\psi \otimes M_{\pi_t})(f_1 \otimes f_2)$ *is bounded for every* $t \in \mathcal{R}$, $f_1 \otimes f_2 \in \mathcal{B}(G^2) \otimes \mathcal{B}(G^2)$ [4].

Theorem 2. *Let* $\mathcal{H}^\infty(G^2, \mathcal{A}(S))$ *also be space with continuous bounded functions through* G^2 *to* $\mathcal{A}(S)$, *as well as* $\mathcal{A}(S)$ *become the Banach algebra of the all the bounded linear operators on S. Let* $h_\alpha(\psi_{t\alpha})$ *on* $\mathcal{H}^\infty(G^2, \mathcal{A}(S))$ *converge at* $h(\psi_t)$, *and also let* f_α *be a sequence that converges to f in*

$\mathcal{H}V_0(G^2, S)$. *Consequently, in* $\mathcal{H}V_0(G^2, S) \otimes \mathcal{H}V_0(G^2, S)$ *the products of* $f_\alpha h_\alpha(\psi_{t\alpha})$ *converges to* $fh(\psi_t)$.

Proof. Let $h_\alpha(\varphi_{t\alpha})$ converges to $h(\psi_t)$ in $\mathcal{H}(G^2, \mathcal{A}(S))$. Then $\| f_n h_n(\varphi_{tn}) - fh(\psi_t) \|_S = \leq \| h_n(\psi_{t_n}) - h(\psi_t) \| \| f_n \|_S + \| h(\psi_t) \|_\infty \| f_n - f \|_S \to 0$ as $\| h_n(\psi_{tn}) - h(\psi_t) \|_\infty \to 0$ and $\| f_n - f \|_\infty \to 0$.

Theorem 3. *Consider* $\nabla : \mathcal{R} \times G(\mathcal{R}) \otimes G(\mathcal{R}) \to G(\mathcal{R}) \otimes G(\mathcal{R})$ *become the function defined by* $\nabla(t, f_1 \otimes f_2) = (T_{\psi t} \otimes M_{\pi_t})(f_1 \otimes f_2)$ *for each and every* $t \in \mathcal{R}$ *and* $f_1 \otimes f_2 \in G(\mathcal{R}) \otimes G(\mathcal{R})$. *Then on* ∇, *there is still a linear dynamical system* $G(\mathcal{R}) \otimes G(\mathcal{R})$.

Proof. During $T_{\psi_t} \otimes M_{\pi_t}$ would be a type of Tensor product and Toeplitz operator on $G(\mathcal{R}) \otimes \mathcal{H}(\mathcal{R})$ each and every $t \in \mathcal{R}$ furthermore $f_1 \otimes f_2 \in G(\mathcal{R}) \otimes G(\mathcal{R})$. It is clear to observe that $\nabla(0, f_1 \otimes f_2) = f_1 \otimes f_2$ and $\nabla(t + s, f_1 \otimes f_2) = \nabla(t, \Delta(s, (f_1 \otimes f_2))$. As a result, to demonstrate this, $\nabla(t, f_1 \otimes f_2)$ is a dynamical system on $G(\mathcal{R}) \otimes G(\mathcal{R})$, it is sufficient to establish that ∇ is continuous. Let $(t_\alpha, f_{1_\alpha} \otimes f_{2_\alpha})$ be a net in $\mathcal{R} \times G(\mathcal{R}) \otimes G(\mathcal{R})$ such that $(t_\alpha, f_{1_\alpha} \otimes f_{2_\alpha}) \to (t, f_1 \otimes f_2)$. $\| \nabla(t_\alpha, f_{1_\alpha} \otimes f_{2_\alpha}) - \nabla(t, f_1 \otimes f_2) \| \to 0$ as $| t_\alpha - t | \to 0$ and $\psi_{t\alpha} \to \psi_t$. Therefore $\nabla(t, f_1 \otimes f_2)$ is a dynamical system on $G(\mathcal{R}) \otimes G(\mathcal{R})$.

Theorem 4. *Allow* $T_\psi : \mathcal{A}(G^2) \to \mathcal{A}(G^2)$ *and* $\pi_t : G^2 \to \mathbb{C}$ *to be continuous functions. Then* $(M_{\pi_t} \otimes T_\psi)(f_1 \otimes f_2)$ *was also bounded for each and every* $t \in \mathcal{R}$, $f_1 \otimes f_2 \in B(G^2) \otimes B(G^2)$.

Proof. We will demonstrate that $M_{\pi_t} \otimes T_\psi$ is continuous only at origin. However we still assert that $M_{\pi_t} \otimes T_\psi(f_1 \otimes f_2) \subseteq \mathcal{A}$. We have $\| M_{\pi_t} \otimes T_\psi(f_1 \otimes f_2) \| \leq \| (f_1 \otimes f_2)(z_1 \otimes z_2) \|$ as $t \to 0 \leq 1$. As a result, $M_{\pi_t} \otimes T_\psi$ is continuous at the origin. As a result, verified.

Theorem 5. *Letting* $\nabla : \mathcal{R} \times G(\mathcal{R}) \otimes G(\mathcal{R}) \to G(\mathcal{R}) \otimes G(\mathcal{R})$ *is still this* *functional described as* $\nabla(t, f_1 \otimes f_2) = (M_{\pi_t} \otimes T_{\psi_t})(f_1 \otimes f_2)$ *for every* $t \in \mathcal{R}$ *and* $f_1 \otimes f_2 \in G(\mathcal{R}) \otimes G(\mathcal{R})$. *Finally, under* $G(\mathcal{R}) \otimes G(\mathcal{R})$, ∇ *would be a linear dynamical system*.

Proof. Because $M_{\pi_t} \otimes T_{\psi_t}$ has become a Tensor sum and Toeplitz operator on $G(\mathcal{R}) \otimes G(\mathcal{R})$ with every $t \in \mathcal{R}$ and $f_1 \otimes f_2 \in G(\mathcal{R}) \otimes G(\mathcal{R})$. This becomes obvious because $\nabla(0, f_1 \otimes f_2) = f_1 \otimes f_2$ and $\nabla(t + s, f_1 \otimes f_2)$ $= \nabla(t, \Delta(s, f_1 \otimes f_2))$. Therefore, To demonstrate that either $\nabla(t, f_1 \otimes f_2)$ has become a dynamical system over $G(\mathcal{R}) \otimes G(\mathcal{R})$, it is sufficient to demonstrate that ∇ has been continuous. Allow $(t_\alpha, f_{1_\alpha} \otimes f_{2_\alpha})$ to have become a cover though the $\mathcal{R} \times G(\mathcal{R}) \otimes G(\mathcal{R})$ as well as $(t_\alpha, f_{1_\alpha} \otimes f_{2_\alpha}) \to (t, f_1 \otimes f_2)$. We shall show that $\nabla(t_\alpha, f_{1_\alpha} \otimes f_{2_\alpha}) \to \nabla(t, f \otimes g)$. Then $\nabla(t, f_1 \otimes f_2)$ is a dynamical system on $G(\mathcal{R}) \otimes G(\mathcal{R})$. Because, according to theorem 3.

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