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GENERATORS OF BOREL MEASURABLE COMMUTATIVE ALGEBRA ON COMPACT HAUSDORFF TAKING VON NEUMANN AW* OVER *-ISOMORPHISM

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*For any complex valued functions over any topological space $\mathcal{F}$ there exists a relation in von Neumann algebras of *-graded that is bounded on compact Hausdorff where for category- I, II, III there exists a commutative form of AW^* algebras such that to satisfy a monotone complete C^* algebra suffice an isomorphic factor $\mathfrak{f}$ on the same AW^* tamed as W^* having the generators η for a generic group $\eta(\mathcal{G})$ for 2-groups $\mathcal{G}_+$ and $\mathcal{G}_-$ for the former being additive integers generating the later free group for AW^* algebras where compact Hausdorff $\mathcal{CH}$ a Borel measure β exists in compact set $\mathcal{C}$ norms the associated Hausdorff space over a locally finite $\sigma - algebra$ via $\beta(\mathcal{C}) < \infty$.*

KEYWORDS AND PHRASES – *Commutative algebra, Operator theory, Hilbert space.*
Mathematical subject Classification (MSC) – primary (13-XX, 52-XX), secondary (13-11, 52B20)

METHOD (I) – Establishing Equivalence

For any positive integer ρ we can consider any idempotent element for a general property to suffice that ρ in the relation of an associated element α such that $\alpha^1 = \alpha^{1+1} = \alpha^{1+1+1} = \alpha^{1+1+1+1} = \cdots = \alpha^\rho$ where the simplification table states $\alpha^1 = \alpha^{1+1}$. With this if one takes the annihilator[1-5],

$$\begin{cases} left \\ right \end{cases} \forall \text{concerned commutative rings } R\ \exists \text{annihilator } \mathcal{A}\ \exists \mathcal{A} \text{ for } R \text{ suffice } \mathcal{A}_R$$

Where for the left module if there is a set $\mathcal{E} = \{d\} \ni d$ is any number of elements of set $\mathcal{E}$ then $\mathcal{A}_R$ or the annihilator or ring R suffice a relation as per the element μ of ring R; we get 3 –properties,

$$(A) \begin{cases} \mathcal{E} = \{d\} \\ \mathcal{A}_R \text{ exists when } d \subseteq \mathcal{E}\ \forall \end{cases} \mu \in R \text{ and } \mu^0 \in d$$

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Then the AW^* algebra suffice,

$$(B)\begin{cases} C^* - algebra \\ Baer * -ring \end{cases}$$

$\exists$ $Baer * -ring$ suffice 2 −properties as,

$$(C)\begin{cases} \alpha^1 = \alpha^{1+1} \\ left\ annihilator\ L \end{cases}$$

There exists a Rickart *−ring to relate (A) and (C) as,

$$L \subseteq ring\ R\ for\ \{\mu \in R \mid \mu L = \{0\}\}$$

Thus getting the relation to suffice (B) in a concrete way with L as the left-annihilator, the generalized W*−algebra which is again a special case of C^* −algebra for any Hilbert space h^* there is a weak operator topology for the operator $\mathcal{J}$ such that[2,4],

$$W^* - algebra \simeq C^* - algebra\ for\ a\ map\ \pi: \mathcal{J} \longrightarrow \langle \mathcal{J}_{,i,j} \rangle$$

Where i, j are vectors of that Hilbert space where isomorphism of the operator exists for an involution parameter $\iota : ring\ R\ to\ ring\ R^{op}$ establishing[7-10],

$$\iota\begin{cases} Baer * -ring \xrightarrow{generators} L \\ Baer * -ring \xrightarrow{generators} L \\ \downarrow \\ \downarrow \\ \downarrow \\ AW^* - algebra \begin{cases} C^* - algebras \\ Baer * -ring \xrightarrow{projections} (\alpha^1 = \alpha^{1+1})^* = (\alpha^1 = \alpha^{1+1})\ in\ W^* - algebra \end{cases} \end{cases}$$

METHOD (II) − Establishing Factor

Taking the identity operator $\mathfrak{f}$ as factor in von Neumann algebras there exists 3 −categories for a unique decomposition in every commutative algebra[1,8,10-12],

$$(D)\begin{cases} \text{I} - \text{discrete, semi} - \text{finite, properly} - \text{infinite (over P} - 1 \text{ projections} \longrightarrow \text{finite)} \\ \text{II} - \text{continuous, semi} - \text{finite, finite} \\ \text{III} - \text{continuous, semi} - \text{finite, properly infinite} \end{cases}$$

Respect to the commutative form of AW^* −algebras, (D) exists in a compact Hausdorff for every bounded *−graded von Neumann algebras, Borel measure βcan be found for generators η such that for I, II, III norms in a compact set $\mathcal{C}$ for compact Hausdorff $\mathcal{CH}$ where power factors $\mathfrak{f}_\delta$ establishes over μ relating Araki-Wood factor over[1-3,11-14],

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$$\begin{cases} I \longrightarrow \begin{cases} I_k \text{for finite } k \\ I_\infty \end{cases} \\ II \longrightarrow \begin{cases} II_1 \\ II_\infty \end{cases} \\ III \longrightarrow \begin{cases} III_0 \\ III_\infty \end{cases} \forall \mathfrak{f}_\delta \; \exists 0 < \delta < 1 \end{cases}$$

Suffice the commutation over the relation[1,5,7,8-10],

$$(\varphi \oplus \varphi^0)' = \varphi' \oplus (\varphi^0)' \; \exists I, II, III \in (\varphi, \varphi^0)$$

Over the generic group[10,13,14],

$$\eta(\mathcal{G}) \begin{cases} generators \; \eta \\ \mathcal{G}_+ \longrightarrow additive \; intigers \\ \mathcal{G}_- \longrightarrow Borel \; \beta \; for \; compact \; Hausdorff \; CH \longrightarrow \text{locally finite } \sigma - algebra \text{ via } \beta(\mathcal{C}) < \infty \end{cases}$$

DISCUSSION

For the associated generators taken over the generic groups having two forms for the later suffice the Borel measurable set, there is a uniqueness and equivalence between AW* generalization to W* with C* where for the categories I, II, III one gets a relative factor $\mathfrak{f}$ which with the affine parameter δ gives the commutative relations for the generic groups that are associated satisfies METHOD (II) in a nice way so as to suffice the earlier relations for the idempotent, rings, Baer, Rickart, weak operator topology in the sense to conclude left-annihilator, projections with the Baer*−ring capturing every parameters of AW* for the related involutions mapping from ring R to opposite ring R^{op}.

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