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# About some class of topological bounded *-algebras

Useful generalization of commutative topological algebras is matrix algebras above commutative topological algebras. In papers [1-3] proved that any (semi-simple unital Banach or normed) algebra $U$ above the field of complex numbers $C$ with unit $e$ and center $Z$ is topologically isomorphic to matrix algebra $M_n(Z)$ if and only if when $U$ is algebra with standard identities ($F_{2n}$ -algebra) and contains subalgebra $U_0$ which isomorphic to $M_n(C)$ and contains unit $e$.

The main goal of our report is obtain the result which is similar to [1-3] for the class of topological nuclear bounded *-algebras. The next theorem is proved.

**Theorem** Let $U$ - unital semi-simple topological nuclear *-algebra above $C$, and $Z$ - its center. Then $U$ is topologically isomorphic to $M_n(Z)$ if and only if when:

a) $U$ is $F_{2n}$-algebra;

b) $U$ contains subalgebra $U_0$ which isomorphic to $M_n(C)$ and contains unit $e$.

[1] N.Krupnik, B.Silberman. The structure of some Banach algebras fulfilling a standard identity. — Math. Nachr. 142 (1989),175-180pp.

[2] S.Roch, B.Silbermann. On algebras with standard identities. — Linear algebra and its applications 137/138 (1990), 239-247pp.

[3] S.Tyschenko, About some class of topological *-algebras with standard identities. — Ukr.Math.Journ. 2007, vol.59, 1