# NON-TRIVIAL $C^*$-ALGEBRAS

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Abstract. Every homogeneous $C^*$-algebra corresponds to the algebraic fibre bundle. $C^*$-algebra is called non-trivial if the corresponding algebraic fibre bundle is non-trivial. All $C^*$-algebras generated by idempotents that studied before corresponded to the trivial algebraic fibre bundles. Let $A$ denotes a homogeneous separable non-commutative $C^*$-algebra. Let $A$ contains a non-trivial idempotent. Then $A$ can be generated by idempotents. It is follows from here that we need to study the topology properties of $C^*$-algebras generated by idempotents to describe such algebras properly. Also in the work we found the minimal number of idempotent generators for every homogeneous $C^*$-algebra $A$ with the set of maximal ideals homeomorphic to the sphere $S^2$.

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