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NON-REMOVABLE IDEALS IN COMMUTATIVE BANACH ALGEBRAS

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An ideal I in a commutative Banach algebra A is called removable if there exists a superalgebra $B \supset A$ such that I is not contained in a proper ideal in B . We say that an ideal $I \subset A$ consists of joint topological divisors of zero if

$$\inf_{\substack{x \in A \\ \|x\|=1}} \sum_{i=1}^n |a_i x| = 0 \text{ for every finite family } a_1, \dots, a_n \in I.$$

Obviously I is non-removable in this case.

These notions were introduced and studied by R. Arens, W. Żelazko and others. Arens and Żelazko conjectured that the converse statement is also true i.e. that an ideal I in a commutative Banach algebra is non-removable if and only if it consists of joint topological divisors of zero.

A positive answer to this conjecture is going to appear in *Studia Math.* As easy consequences this yields that every finite family of removable ideals can be removed simultaneously and it also gives positive answers to several other questions of Arens and Żelazko.