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Schur lemma and the spectral mapping formula. (English) Zbl 1118.46045
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Summary: Let B be a complex topological unital algebra. The left joint spectrum of a set $S \subset B$ is defined by the formula

$$\sigma_l(S) = \{(\lambda(s))_{s \in S} \in \mathbb{C}^S \mid \{s - \lambda(s)\}_{s \in S} \text{ generates a proper left ideal}\}.$$

Using the Schur lemma and the Gelfand-Mazur theorem, we prove that $\sigma_l(S)$ has the spectral mapping property for sets S of pairwise commuting elements if B is an m -convex algebra with all maximal left ideals closed, or if B is a locally convex Waelbroeck algebra. The right ideal version of this result is also valid.

MSC:

- [46H10](#) Ideals and subalgebras
- [46H30](#) Functional calculus in topological algebras
- [46H15](#) Representations of topological algebras

Cited in **1** Document

Keywords:

Waelbroeck algebra; joint spectrum; spectral mapping formula

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