

ON A CATEGORY OF TOPOLOGICAL SEGAL ALGEBRAS

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The topic of Segal algebras in the context of C^* -algebras, Banach algebras or Fréchet algebras has been popular for several decades. In 2017, I offered a new approach to Segal algebras, which could be used for all topological algebras.

Definition. A topological algebra (A, τ_A) is a left (right or two-sided) **Segal algebra** in a topological algebra (B, τ_B) via an algebra homomorphism $f : A \rightarrow B$, if

- 1) $\text{cl}_B(f(A)) = B$;
- 2) $\tau_A \supseteq \{f^{-1}(U) : U \in \tau_B\}$;
- 3) $f(A)$ is a left (respectively, right or two-sided) ideal of B .

In the present talk, I start with some results about the general topological Segal algebras. The first part of the talk will be focused on different possibilities of defining a category of general topological Segal algebras. After that I will talk about some recent results about the obtained results for the categories of topological Segal algebras and present an overview of the “state of art” of the research about the categorical properties of the 2 categories of topological Segal algebras.