

What is a topological theory?

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It is the tenet of monoidal topology that topological structures may be uniformly described as lax-algebraic structures, with the notion of monoid in a monoidal category playing a pivotal role. Furthermore, lax modifications of the syntax used in algebra furnish the syntax used in topology, most prominently through lax extensions of Set-monads to quantale-valued relations.

Dirk Hofmann observed that such extensions are determined by a lax algebraic structure on one specific object (the quantale in question) and, turning the tables, made this fact the cornerstone of his notion of topological theory (2007, *Advances in Mathematics*).

In this talk we address potential modifications of his notion, which appear to be crucial when aiming to move beyond quantales and Set-based monads.