

HOMOTOPY-COHERENT ALGEBRA VIA SEGAL CONDITIONS

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In this talk I will introduce a general framework for homotopy-coherent algebraic structures defined by presheaves on certain infinity categories - so-called "algebraic patterns" - satisfying Segal-type limit conditions. This theory does not only recover well-known examples for infinity categorical structures such as (infinity, n)-categories, infinity-operads and infinity-properads, but also allows us to define enrichment on these objects as well as algebras for infinity-operads. I will discuss some applications of the theory of algebraic patterns such as providing a simple proof for the existence of operadic Kan extensions in the sense of Lurie. Moreover, every algebraic structure given by an algebraic pattern defines a polynomial monad on a functor category. At the end of this talk we will see that the infinity category of polynomial monads on functor categories is actually equivalent to the infinity category of algebraic patterns.