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*Weak  $n$ -categories with strict units via iterated enrichment*

This is joint work with Michael Batanin and Denis-Charles Cisinski.

The notion of a reduced higher operad is introduced to formalise the idea that the higher categorical structures being considered have a unique operation of each "unit type". Garner's machinery of algebraic weak factorisation systems then gives rise to a notion of contractibility for reduced operads, which includes the feature that the unique unit operations act as units with respect to the other operations. There is an initial reduced  $n$ -operad that is contractible in this sense, thus giving an operadic definition of weak  $n$ -category with strict units. Moreover, there is a lax tensor product on the category of algebras of this operad, and enriched categories with respect to this lax tensor product can be identified with weak  $(n+1)$ -categories with strict units.