



ItaCa Fest

June 17 2020 — 14:00 CEST

ANDREA GAGNA

Oplax 3-functors |

We motivate the introduction of a notion of normalized oplax 3-functors from a homotopical point of view. We explain the algebra of trees needed for the definition and show that they induce a canonical simplicial morphism. Finally, we characterize the simplicial morphisms between nerves coming from normalized oplax 3-functors.

NICOLA GAMBINO

Variations on distributive laws |

The notion of a distributive law between monads goes back to fundamental work of Jon Beck from the late '60s. Just as a monad describes a kind of algebraic structure, a distributive law between two monads describes how the algebraic structure for one monad distributes over the algebraic structure for the other, as in the notion of a ring (where products distribute over sums).

*I will give a survey of variations of distributive laws, according to three orthogonal directions: replacing monads with relative monads (in the sense of Altenkirch et al), replacing categories with objects of a 2-category (*à la Street*), and increasing categorical dimension. One application is to substitution monoidal structures and operads. This is based on joint work with Fiore, Hyland and Winskel and recent joint work with Lobbia.*

