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Structured colimits and polynomial functors

For various constructions in algebra, geometry, homotopy theory and higher category theory, one has some combinatorial ingredients which determine both the nature of the colimits that play a role in the calculations, and the algebraic structure enjoyed by the resulting constructions. In this talk it will be explained how the theory of polynomial functors and of 2-dimensional monad theory can be used to organise such constructions and their ingredients more conceptually. Applications to the modular envelope of a cyclic operad will be discussed.

This is joint work with Michael Batanin.