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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.