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Homotopy theory of props

Props have the capability to control algebraic structures more general than those described by operads; for example, there is a prop governing Hopf algebras and a prop governing conformal field theories. We study the category consisting of all (colored, simplicial) props. We show that this category is a closed symmetric monoidal category with tensor product closely related to the Boardman-Vogt tensor product of operads. Furthermore, this category admits a Quillen model structure which restricts to the model structure for (colored) operads developed by Robertson and to the Bergner model structure for simplicial categories. (joint with Marcy Robertson)