

Kai Wang : The deformation theories of operated algebras and the minimal models of their operads

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Abstract: The minimal models of operads play important roles in the studies of homotopy theory of algebraic structures. For Koszul operads, the classical Koszul duality theory for operads provides a canonical way to construct their minimal models. But the general method to construct the minimal models of non-Koszul operads is still unknown. In this talk, we will study the deformation theory of some operated algebras whose operads are not Koszul, including Rota-Baxter algebras, differential algebras, Nijenhuis algebras etc. We will give an explicit construction of the minimal models of these operads. Then the cohomology theories and the L-infinity algebras which control the deformations of these operated algebras will be induced in a natural way.