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„Koszul duality and a conjecture of Francis-Gaitsgory“

Abstract:

Ginzburg-Kapranov and Getzler-Jones exhibited a duality between algebras for an operad O and coalgebras (with divided powers) for a "Koszul dual" cooperad BO , taking the form of an adjoint pair of functors between these categories. Instances of this duality include that between Lie algebras and cocommutative coalgebras, as in Quillen's work on rational homotopy theory, and bar-cobar duality for associative (co)algebras, as in the work of Moore. The focus of this talk is the following basic question: on what subcategories of O -algebras and BO -coalgebras does this duality adjunction restrict to an equivalence? I will discuss a general answer to this question and explain how it disagrees with a conjecture of Francis and Gaitsgory, but confirms the known special cases of this conjecture in the literature.