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Title: Moduli of perfect complexes

Abstract: Associated to a finite dimensional differential graded category A is a (derived) stack, or equivalently, higher groupoid, whose objects are deformations of objects of A . The actual definition is straightforward it is a simplicial (derived) scheme whose scheme of k -simplices parametrizes A -infinity functors (homotopy associative functors) from the path groupoid of the k -simplex to A .

In this talk, we present an analogue of this theorem, in which we replace unital A -infinity functors by non-unital A -infinity functors. The resulting (derived) stack is the moduli stack of the idempotent completion of A . An example is the derived stack of perfect complexes over a field. In characteristic zero, we may use this construction to simplify the study of Chern-Weil theory for perfect complexes: we obtain for the first time an explicit formula for the Chern character as a differential form, whose existence was established by Ton and Vezzosi.