

co-Segal algebras and Deligne's conjecture

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Abstract: The classical *Deligne conjecture* is about the existence of an E_2 -algebra structure on the Hochschild cohomology $HH^*(A)$ of an associative algebra A . Several generalizations of this conjecture (now theorem) exist and most of the existing proofs use operad theory. Other proofs use model categories and have been considered by Kock-Toën, Dwyer-Hess and others. In this talk I will also use model categories to show that in a *nice* monoidal model category $(\mathcal{M}, \otimes, I)$, there are two co-Segal algebra structures on the derived endomorphism object $\mathbb{R}End(I)$. Here we think of $\mathbb{R}End(I)$ as thhe¹ *Hochschild cohomology of I* .

¹'thhe' is the homotopy version of 'the' (Drinfeld)