

Northeastern University



Mathematics Department

Geometry, Physics, and Representation Theory Seminar

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What Drinfeld could have replied to Deligne.

Abstract

My colleagues keep asking me if there is an explicit construction whose input is a Drinfeld associator and whose output is a formality quasi-isomorphism for the brace operad BR . In my talk, I will give a positive answer to this question by showing that there are no obstructions for constructing a quasi-isomorphism from the Cobar-Bar resolution of BR to the chain operad of parenthesized braids. In principle, Drinfeld could have sketched this construction as a possible response to Deligne's famous letter from 1993. Of course, this story would not be complete without Tamarkin's paper "Formality of chain operad of small squares" from 1998 and Fiedorowicz's recognition principle. Details of this construction will appear in a joint textbook (in preparation) with Boris Tsygan.