MATEMATISKA INSTITUTIONEN
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Avd. Matematik

SJÄLVSTÄNDIGT ARBETE I MATEMATIK

Onsdagen den 25 april kl. 14.15–15.15 presenterar Kaj Börjeson sitt arbete "On the Operad of 2-Gerstenhaber Algebras" (30 högskolepoäng, avancerad nivå).

Handledare: Sergei Merkulov

Plats: Sal 21, hus 5, Kräftriket

Abstract: The purpose of this thesis is to provide an introduction to the theory of operads with a focus on homological algebra and to analyze the homological properties of the operad of 2-Gerstenhaber algebras. With this view we present among other things the fundamentals of category theory, monoidal categories and operads with a focus on topological and algebraic operads. We define the cobar construction of an operad and the concept of Koszul operad. Koszulity of an operad provides a straightforward method of constructing a minimal resolution via the cobar construction. We analyze the operad 2-Gerst of 2-Gerstenhaber algebras that was introduced by Etingof et al. in [EHKR] as the cohomology of the moduli space of stable genus zero real algebraic curves. Our main new result is a proof that this operad is a Koszul operad. This is done via the use of a distributive law as introduced by Markl in [Mar].
All interested are welcome!