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Självständigt arbete i matematik

Matematiska institutionen

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Alexander Funcke: Strong homotopy algebras. Introducing and explicitly constructing A_∞ and L_∞ algebras

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Sammanfattning

The essay is intended to be an introduction to the strong homotopy algebras called L_∞ and A_∞ . They are presented not only using the necessary definitions and theorems, but also with a slim over-view of some common constructions in general homological algebra. The latter is intended to provide a setting for thinking about the algebras. Beyond the introductory material, the essay also describes how explicit constructions of both L_∞ and A_∞ algebras may be conducted. Finally, in the last chapter there are three examples of constructions of L_∞ algebras from various graded polynomial rings.