MATEMATISKA INSTITUTIONEN
STOCKHOLMS UNIVERSITET
Avd. Matematik

SJÄLVSTÄNDIGT ARBETE I MATEMATIK

Onsdagen den 17 juni kl. 8:30-9:30 presenterar Assar Andersson sitt arbete "Modelling rational homotopy types with A_∞-algebras" (30 högskolepoäng, avancerad nivå).

Handledare: Alexander Berglund

Plats: Sal 32, hus 5, Kräftriket

Sammanfattning: We start by introducing the reader to A_∞-algebras, and their morphisms. We show that A_∞-algebras over a graded vector space V corresponds to cofree DGA-coalgebras over V. Next, we use homological perturbation theory to prove the homotopy transfer theorem.

We also give an outline of why, simply connected topological spaces X,Y with finite dimensional $H^p(X;\mathbb{Q})$, $H^p(Y;\mathbb{Q})$, for each p, are of the same rational homotopy type if and only if $C^*(X;\mathbb{Q})$ and $C^*(Y;\mathbb{Q})$ are of the same homotopy type.

Finally, we use the homotopy transfer theorem to model cochain algebras with A_∞-algebras over their homology, and we show that this modeling gives an A_∞-algebra which is unique up to A_∞-isomorphism, for each homotopy type of cochain algebras.

Alla intresserade är välkomna!