Department of Mathematics, BGU

AGNT

On *Wednesday, May ,20 2026*

At *14:10 – 15:10*

In *201*

Amnon Yekutieli (BGU)

will talk about

The Simplicial Cylinder DG Ring

Abstract: The Keller cylinder DG ring encodes homotopies between DG ring homomorphisms f_0, f_1 : A \to B.

Recently we discovered the higher cylinder DG rings Cyl_q(B), which assemble into the simplicial cylinder DG ring Cyl(B). For q=1 this recovers Keller's original construction.

The sets SHom_q(A,B) of DG ring homomorphisms A \to Cyl_q(B) form the simplicial Hom set SHom(A,B). Our main result is that when A is a semi-free DG ring, the simplicial set SHom(A,B) is a Kan complex.

We prove several results about the fundamental groupoid SHom_{\leq 1}(A,B), including invariance under quasi-isomorphism B' \to B, and that the automorphism groups are abelian. We also indicate some applications of this work.

Typed notes: https://drive.google.com/file/d/1sMzwoC_DGCotOfak8o8wYpmttgZELf6l/view

arXiv eprint: https://arxiv.org/abs/2602.11943