

Department of Mathematics, BGU

---

---

# AGNT

---

---

*On Monday, March ,27 2023*

*At 12:10 – 13:10*

*In 101-*

Amnon Yekutieli (BGU)

will talk about

## **An Algebraic Approach to the Cotangent Complex (online meeting)**

Abstract: Let  $B/A$  be a pair of commutative rings. We propose an algebraic approach to the cotangent complex  $L_{B/A}$ . Using commutative semi-free DG ring resolutions of  $B$  relative to  $A$ , we construct a complex of  $B$ -modules  $LCot_{B/A}$ . This construction works more generally for a pair  $B/A$  of commutative DG rings.

In the talk we will explain all these concepts. Then we will discuss the important properties of the DG  $B$ -module  $LCot_{B/A}$ . If time permits, we'll outline some of the proofs.

It is conjectured that for a pair of rings  $B/A$ , our  $LCot_{B/A}$  coincides with the usual cotangent complex  $L_{B/A}$ , which is constructed by simplicial methods. We shall also relate  $LCot_{B/A}$  to modern homotopical versions of the cotangent complex.

Slides: <https://sites.google.com/view/amyekut-math/home/lectures/cotangent>