

Department of Mathematics, BGU

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# AGNT

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*On Tuesday, December ,27 2022*

*At 12:40 – 13:40*

*In 101-*

Liran Shaul (Charles University, Prague)

will talk about

## **Finitistic dimensions, DG-rings and dualizing complexes**

Abstract: The projective finitistic dimension of a ring is an important homological dimension which measures the complexity of homological algebra over it. The finitistic dimension conjecture which says that this invariant is finite for artin algebras is considered to be one of the most important open problems in homological algebra. In this talk we discuss this conjecture, its importance and connection to other important conjectures. We then show how by using DG-ring techniques, and the noncommutative covariant Grothendieck duality, it is possible to connect this conjecture to the global structure of injective modules in the unbounded derived category of the ring. This generalizes work of Rickard from finite dimensional algebras over a field to all noetherian rings which admit a dualizing complex.