

Department of Mathematics, BGU

Jerusalem - Be'er Sheva Algebraic Geometry Seminar

On *Wednesday, January 6 2021*

At *15:00 – 16:30*

In

Liran Shaul (Charles University, Prague (

will talk about

Derived quotients of Cohen-Macaulay rings

Abstract: It is well known that if A is a Cohen-Macaulay ring and a_1, \dots, a_n is an A -regular sequence, then the quotient ring $A/(a_1, \dots, a_n)$ is also a Cohen-Macaulay ring. In this talk we explain that by deriving the quotient operation, if A is a Cohen-Macaulay ring and a_1, \dots, a_n is any sequence of elements in A , the derived quotient of A with respect to (a_1, \dots, a_n) is Cohen-Macaulay. As an application, we generalize the miracle flatness theorem to derived algebraic geometry. As another application, given a morphism $f: X \rightarrow Y$ from a Cohen-Macaulay scheme to a nonsingular scheme, we show that the homotopy fiber of f at every point is Cohen-Macaulay.