

Department of Mathematics, BGU

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# AGNT

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*On Wednesday, June 3, 2020*

*At 15:00 – 16:15*

*In Zoom info will be sent to the seminar mailing list*

URIYA FIRST (HAIFA)

will talk about

## **The Grothendieck–Serre conjecture for classical groups in low dimensions**

**ABSTRACT:** A famous conjecture of Grothendieck and Serre predicts that if  $G$  is a reductive group scheme over a semilocal regular domain  $R$  and  $X$  is a  $G$ -torsor, then  $X$  has a point over the fraction field of  $R$  if and only if it has an  $R$ -point. Many instances of the conjecture have been established over the years. Most notably, Panin and Fedorov–Panin proved the conjecture when  $R$  contains a field.

I will discuss a recent work with Eva Bayer-Fluckiger and Raman Parimala in which we prove the conjecture for all forms of  $GL_n$ ,  $Sp_n$  and  $SO_n$  when  $R$  is 2-dimensional, and all forms of  $GL_{2n+1}$  when  $R$  is 4-dimensional. (The ring  $R$  is not required to contain a field.) In the course of proving this, we also establish the exactness of the Gersten–Witt complex of an Azumaya algebra with involution  $(A,s)$  over a semilocal regular ring  $R$ , provided the Krull dimension of  $R$  or the index of  $A$  are sufficiently small.

Relevant definitions will be recalled during the talk.

**Please Note the Unusual Place!**