



THE WEIZMANN INSTITUTE OF SCIENCE  
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

Room 261 ,Ziskind Building  
on Wednesday, Jun 10, 2015  
at 11:00

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A description of two-generated subalgebras of a polynomial ring in one variable  
and a new proof of the AMS theorem

Abstract:

The famous AMS (Abhyankar-Moh-Suzuki) theorem states that if two polynomials  $f$  and  $g$  in one variable with coefficients in a field  $F$  generate all algebra of polynomials, i.e. any polynomial  $h$  in one variable can be expressed as  $h = H(f, g)$  where  $H$  is a polynomial in two variables, then either the degree of  $f$  divides the degree of  $g$ , or the degree of  $g$  divides the degree of  $f$ , or the degree of  $f$  and the degree of  $g$  are divisible by the characteristic of the field  $F$ . There were several wrong published proofs of this theorem and there are many correct published proofs of this theorem but all of them either long or not self-contained. Recently I found a (relatively) short and self-contained proof which is not published yet and which I can explain in one-two hours.