

המחלקה למתמטיקה, בן-גוריון

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## קולוקוויום

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ביום שלישי, 25 באפריל, 2017

בשעה 14:30 – 15:30

בMath-101

ההרצאה

### the of theory representation in Stability groups symmetric

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**תקציר:** In the finite-dimensional representation theory of symmetric groups, the phenomenon of "stabilization" is interesting. There is a base field  $\mathbb{C}$ , and for each  $n$ , we consider representations  $V_n$  of  $S_n$ . As  $n \rightarrow \infty$ , some sequences  $(V_n)_{n \geq 0}$  appear, where each  $V_n$  is finite-dimensional. For a certain  $n \gg 0$ , the representations  $V_n$  become "the same" in a certain sense. One manifestation of this phenomenon is that the characters of  $V_n$  on  $S_n$  are polynomials in the variables  $x_i$  (the trace of the character) that satisfy certain conditions. More precisely, these sequences are polynomials in the variables  $x_i$  where  $x_i$  is the trace of the character of  $V_n$  on  $S_n$ . The condition is that the polynomial is symmetric in the variables  $x_i$  and that the degree of the polynomial is  $n$ . The variables  $x_i$  are defined as  $x_i = \text{tr}(\sigma^i)$  where  $\sigma \in S_n$  is a permutation of length  $i$ .

$\dim(V_n)$  that property agreeable the satisfy  $(V_n)_{n \geq 0}$  sequences such particular, In  
 $n$  in polynomial is  
 cohomologies contexts: many in encountered are sequences “ ” polynomial Such  
 oriented connected a on points ordered distinct  $n$  of spaces configuration of  
 more. and matrices,  $n \times n$  of varieties rank on polynomials of spaces manifold,  
 by extensively studied been have and -modules,  $FI$  called are sequences These  
 polynomiality on results interesting many yielding others, and Farb Ellenberg, Church,  
 spaces. these of dimensions of  $n$  in  
 following the by described is phenomena stability the of version stronger A  
 settings: two  
 some explain and connected, are they that show settings, both describe will I  
 groups. symmetric the of theory representation the in applications