

המחלקה למתמטיקה, בן-גוריון

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## קולוקוויום

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ביום שלישי, 7 בדצמבר, 2021

בשעה 14:30 – 15:30

בMath-101

ההרצאה

### Character of random groups

תינתן על-ידי

Oren Becker (University of Cambridge)

**תקציר:** The space  $\text{Hom}(\Gamma, G)$  of homomorphisms from a finitely-generated group  $\Gamma$  to a complex semisimple algebraic group  $G$  is known as the space of  $G$ -representations of  $\Gamma$ . We study this space when  $\Gamma$  is a random group. That model is generated by a set of  $k$  subject elements  $r$  of length  $L$  and fixed  $r$  and  $k$  where  $L$  tends to infinity. More precisely, we study the subvariety  $Z$  of  $\text{Hom}(\Gamma, G)$  consisting of those homomorphisms whose images are Zariski-dense in  $G$ . We give an explicit formula for the probability of a random homomorphism being Zariski-dense, showing that for  $k > r + 1$ , the probability tends to 1 as  $L$  tends to infinity. In particular, we show that for  $k > r + 1$ , the probability of a random homomorphism being Zariski-dense is 1. This is a case of rigidity. Galois enjoy  $\Gamma$ .

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