Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Tuesday, January ,9 2018*

At *11:00 – 12:00*

In *201*

Jakub Konieczny (Hebrew University (

will talk about

Automatic sequences as good weights for ergodic theorems

Abstract: We study correlation estimates of automatic sequences (that is, sequences computable by finite automata) with polynomial phases. As a consequence, we provide a new class of good weights for classical and polynomial ergodic theorems, not coming themselves from dynamical systems. We show that automatic sequences are good weights in L^2 for polynomial averages and totally ergodic systems. For totally balanced automatic sequences (i.e., sequences converging to zero in mean along arithmetic progressions) the pointwise weighted ergodic theorem in L^1 holds. Moreover, invertible automatic sequences are good weights for the pointwise polynomial ergodic theorem in L^r, r < .1 This talk is based on joint work with Tanja Eisner.