Department of Mathematics, BGU

Probability and ergodic theory (PET)

On *Tuesday, November ,8 2016*

At *10:50 − 12:00*

In *Math 101-*

Jean-Pierre Conze (Rennes)

will talk about

Remarks on the set of values of the ergodic sums of an integer valued function

Abstract: For an ergodic measure preserving dynamical system $(X, \cal B, \mu, T)$ and a measurable function f with values in $\mathbb{Z}$, we consider for $x \in X$ the set of values of the ergodic sums $S_nf(x):= \sum_0^{n-1} f(T^k x), n \geq .1$

If f is integrable with $\mu(f) < ,0$ several properties of this set (from the point of view of recurrence or arithmetic sets) are simple consequences of Bourgain's results .(1989)

For example, the set ${S_nf(x), n \geq ${1 contains infinitely many squares for a.e. x. If f is not integrable, this property may fail, as shown by a construction of M. Boshernitzan. We give also a counter-example of an integrable centered function f for which the cocycle $(S_nf(x), n \geq $(1 is non regular and the property fails.