

Stanford University
Departments of Mathematics and Statistics

PROBABILITY SEMINAR

4pm, Monday, October 16, 2017
Sequoia Hall Room 200

Refreshments served at 3:30pm in the Lounge.

Speaker: Yuri Kifer, *Hebrew University of Jerusalem*

Title: **Limit Theorems for Nonconventional Arrays**

Abstract:

For the last nine years together with Varadhan and my students I studied limit theorems for nonconventional sums $S_N = \sum_{n=1}^N F(X(n), X(2n), \dots, X(\ell n))$, where $X(n)$'s are random variables with weak dependence, which was partially motivated by nonconventional ergodic theorems originated in Furstenberg's ergodic theory proof of Szemerédi's theorem about arithmetic progressions in sets of integers of positive density. Recently, it turned out that various limit theorems of probability theory can also be studied for sums S_N in a more general situation of nonconventional arrays of the form $S_N = \sum_{n=1}^N F(X(p_1 n + q_1 N), X(p_2 n + q_2 N), \dots, X(p_\ell n + q_\ell N))$. I will talk about strong law of large numbers, central limit theorem, and the Poisson limit theorem for such arrays.