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Colloquium

Nonconventional Arrays and an Extension of the Szemerédi Theorem

Professor Yuri KIFER
Hebrew University of Jerusalem

Abstract

The study of nonconventional sums $S_N = \sum_{n=1}^{N} F(X(n), X(2n), \dots, X(\ell N))$, where $X(n) = g \circ T^n$ for a measure preserving transformation T, has a 40 years history after Furstenberg showed that they are related to the 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 be successfully studied for sums S_N when $X(n)$, $n = 1, 2, \dots$ are weakly dependent random variables. I will talk about a more general situation of nonconventional arrays of the form $S_N = \sum_{n=1}^{N} F(X(p_1 n + q_1 N), X(p_2 n + q_2 N), \dots, X(p_\ell n + q_\ell N))$ and how this is related to an extended version of Szemerédi's theorem.

Date: 3 July 2017 (Monday)
Time: 10:30am ~ 11:30am
Venue: Room 222, Lady Shaw Building,
The Chinese University of Hong Kong, Shatin

All are Welcome