

Seminário de sistemas dinâmicos e estocásticos

Departamento de Matemática - IMECC - UNICAMP

NONCONVENTIONAL ARRAYS AND AN EXTENSION OF THE SZEMERDI THEOREM.

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Resumo:

The study of nonconventional sums $S_N = \sum_{n=1}^N F(X(n), X(2n), \dots, X(ln))$, 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 Szemerdis 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 P of the form $S_N = \sum_{n=1}^N F(X(p_1n + q_1N), X(p_2n + q_2N), \dots, X(p_l n + q_l N))$ and how this is related to an extended version of Szemerdis theorem. I will discuss also ergodic and limit theorems for such and more general nonconventional arrays.

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Local: Sala 321 do IMECC.

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