



Colloquium Series



Kříž's Theorem via dynamics
of linear operators

Yunied Puig de Dios
UC Riverside

Abstract: The existence of a set $A \subset \mathbb{Z}$ of positive upper Banach density such that $A - A := \{m - n : m, n \in A, m > n\}$ does not contain a set of the form $E - E$ with E piecewise syndetic is in essence the content of a popular result due to Kříž in 1987, in which he used a graph-theoretical approach. More recently, other proofs of this result have been given using combinatorial number theory. Our goal here is to show that a stronger result than the one given by Kříž can be obtained, and that this can be done via operator theory, namely using dynamics of linear operators on Banach spaces.

Keywords: combinatorial number theory, operator theory

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