

ABSTRACT

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Abstract: It is well known that if a finite set of integers A tiles the integers by translations, then the translation set must be periodic, so that the tiling is equivalent to a factorization $A + B = Z_M$ of a finite cyclic group. Coven and Meyerowitz (1998) proved that when the tiling period M has at most two distinct prime factors, each of the sets A and B can be replaced by a highly ordered "standard" tiling complement. It is not known whether this behaviour persists for all tilings with no restrictions on the number of prime factors of M .

In joint work with Itay Londner, we proved that this is true when $M = (pqr)^2$ is odd. (The even case is almost finished as well.) In my talk I will discuss this problem and introduce the main ingredients of the proof.