1139-05-203 **Noga Alon**, **Jacob Fox** and **Yufei Zhao*** (`yufeiz@mit.edu`). *Efficient arithmetic regularity and removal lemmas for induced bipartite patterns.*

Let G be an abelian group of bounded exponent and $A \subset G$. We show that if the collection of translates of A has VC dimension at most d, then for every $\epsilon > 0$ there is a subgroup H of G of index at most $\epsilon^{-d-o(1)}$ such that one can add or delete at most $\epsilon|G|$ elements to A to make it a union of H-cosets.

We also establish a removal lemma with polynomial bounds, with applications to property testing, for induced bipartite patterns in a finite abelian group with bounded exponent. (Received February 10, 2018)

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