

**NONCONVENTIONAL ARRAYS AND AN EXTENSION OF THE  
SZEMERÉDI THEOREM.**

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ABSTRACT. I'll talk about asymptotic behavior of averages  $\frac{1}{N} \sum_{n=1}^N \prod_{j=0}^{\ell} T^{p_j n + q_j N} f_j$  and about the corresponding extension of the Szemerédi theorem on arithmetic progressions in sets of integers of positive density.