

ON THE ASYMMETRIC SUM-PRODUCT PHENOMENON

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ABSTRACT: Using some new observations connected to higher energies, we obtain quantitative lower bounds on $\max\{|AB|, |A + C|\}$ and $\max\{|(A + \alpha)B|, |A + C|\}$, $\alpha \neq 0$ in the regime when the sizes of finite subsets A, B, C of a field differ significantly.