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Michael T Lacey and **William C McClain*** (bill@math.gatech.edu), Georgia Institute of Technology, Department of Mathematics, Atlanta, GA 30332. *On an Argument of Shkredov on Two-Dimensional Corners in a Finite Field Setting.*

Let \mathbb{F}_2^n be the finite field of cardinality 2^n . For all large n , any subset $A \subset \mathbb{F}_2^n \times \mathbb{F}_2^n$ of cardinality

$$|A| \gtrsim 4^n (\log n)^{-\alpha}, \quad \alpha < 1,$$

must contain three points $\{(x, y), (x + d, y), (x, y + d)\}$ for $x, y, d \in \mathbb{F}_2^n$ and $d \neq 0$. Our argument is an elaboration of an argument of Shkredov, “On one problem of Gowers,” building upon the finite field analog of Ben Green, “Finite field models in additive combinatorics”. The interest in our result is in the exponent on $\log n$, which is larger than has been obtained previously. (Received August 28, 2006)