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Alex Iosevich* (iosevich@gmail.com), 5008 Forum Blvd., Columbia, MO 65203. *Sum/Product theorems in finite fields via Kloosterman sums*.

Let $A \subset \mathbb{Z}_q$, the cyclic group with q elements, q prime. Bourgain, Katz and Tao proved that if $|A| \leq Cq^{1-\epsilon}$, $\epsilon > 0$, there exists $\delta > 0$ such that $\max\{|A \cdot A|, |A + A|\} \geq C'|A|^{1+\delta}$. We prove an "effective" version of this theorem which, for example, implies that if $|A| \approx q^{15/22}$, then $\max\{|A \cdot A|, |A + A|\} \geq C'|A|^{16/22}$. Our main tools are additive combinatorics and sharp bounds for Kloosterman type sums.

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