1086-11-685 **Vorropan Chandee** (vorrapan@gmail.com), **Chantal David*** (cdavid@mathstat.concordia.ca), **Dimitris Koukoulopoulos** (dimkouk@gmail.com) and **Ethan Smith** (ethancsmith@gmail.com). *Elliptic curves with prescribed groups over finite fields.*

Let $G_{m,k} := \mathbb{Z}/m\mathbb{Z} \times \mathbb{Z}/mk\mathbb{Z}$ be an abelian group of rank 2 and order $N = mk^2$. When does there exist a finite field $\mathbb{F}_p$ and an elliptic curve $E/\mathbb{F}_p$ such that $E(\mathbb{F}_p) \simeq G_{m,k}$? It was conjectured by Banks, Pappalardi and Shparlinski that this happens with density 0 if the group if "too split", namely if $k \ll (\log m)^{2-\varepsilon}$, and with density 1 if $k \gg (\log m)^{2+\varepsilon}$. We prove in this talk that the first part of the conjecture holds for the whole range of m and k, and that the second part holds for the limited range $m \leq k^{1/4+\epsilon}$. We also show that G occurs with positive density for a larger range.

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