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A Restricted Roth Theorem Over Finite Fields

Given a set $A \subset \mathbb{F}_p^n$ with at least δp^n elements, $\delta > 0$, we will discuss finding triples $\{(x, x+d, x+2d) \in A \times A \times A : d \in V\}$, where $V = \{x \in \mathbb{F}_p^n : f_1(x) = \cdots = f_R(x) = 0\}$ is the zero set of homogeneous polynomials $f_1, \ldots, f_R$ all of fixed degree d. This is joint work with Akos Magyar.