

u_q sharp subsets of a finite field

by

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Let $f \in \mathbf{F}_q[x]$ where \mathbf{F}_q is a finite field of characteristic p . Wan et al discovered a lower bound for the value set of f in terms of an invariant $u_q(f)$ associated to the polynomial f . We define a notion of u_q -sharp subsets of \mathbf{F}_q and discuss related problems. We show how the notion of u_q -sharp sets may be used to give yet another proof of the classical Cauchy-Davenport theorem.