

1116-14-2246 **Yuval Dor*** (yuval.dor@mail.huji.ac.il). *Zeta functions of difference varieties*. Preliminary report.

Let X be an algebraic variety defined over a finite field with p elements, and let $f : X \rightarrow X$ be a dominant map. Let N_k denote the number of solutions to the equation $f(x) = x^{p^k}$; if f is the identity, then this is the number of \mathbb{F}_q rational points of X .

Results due to E. Hrushovski give estimates on N_k analogous to the Lang Weil bounds. In particular, it can be shown that N_k is nonzero for k sufficiently large. This has applications in group theory, model theory and algebraic geometry.

We explain some of the methods used to prove this and how they can be used to establish rationality of the generating function $\sum N_k t^k$

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