

An index approach on the enumeration of permutation polynomials over finite fields

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A polynomial f over a finite field \mathbb{F}_q is called a permutation polynomial if the mapping $f : \mathbb{F}_q \rightarrow \mathbb{F}_q$ permutes the elements of \mathbb{F}_q . Permutation polynomials were first investigated by Hermite, and since then, many studies concerning them have been devoted. In the last three decades there has been a revival in the interest for permutation polynomials, in part due to their cryptographic applications. In this talk I will give a brief introduction to permutation polynomials over finite fields, in particular, an index approach to the problem of counting permutation polynomials. This is an analogue of Gary L. Mullen's question on the enumeration of permutation polynomials by degrees. degrees.