

Normal and primitive normal elements with prescribed traces in intermediate extensions of finite fields

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In this talk, I will first present a joint work with A.C. Mazumder and D.K. Basnet, where we study the existence and distribution of elements in finite field extensions with prescribed traces in several intermediate extensions that are also either normal or primitive normal. In the former case, we fully characterize the conditions under which such elements exist and provide an explicit enumeration of these elements and, in the latter case, we provide asymptotic results.

Then, I will briefly discuss possible applications of these techniques and results to other finite field problems.