

F-sets, Mordell-Lang, and automaticity

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In this largely expository talk I will discuss old joint work with Scanlon on the Mordell-Lang statement for semiabelian varieties over finite fields, and explain how one can deduce from it a non-effective version of Derksen's later Skolem-Mahler-Lech theorem on the p -normality (and hence p -automaticity) of the vanishing of a linear recurrence in positive characteristic. Our methods involved what can in retrospect be viewed as a generalisation of Derksen's p -normal sets, and which we called F-sets. The connection between F-sets and generalised notions of automaticity will be discussed.

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