

Number Theory Seminar

Friday, September 6th, 2019

11:30 am in Hume 321

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Essential Components in $\mathbb{F}_p[t]$

ABSTRACT

A subset H of non-negative integers is called an essential component, if $\underline{d}(A + H) > \underline{d}(A)$ for all $A \subset \mathbb{N}$ with $0 < \underline{d}(A) < 1$, where $\underline{d}(A)$ is the lower asymptotic density of A . How sparse can an essential component be? The best known result of this problem is due to Ruzsa. Here, we generalize the problem to the additive group $(\mathbb{F}_p[t], +)$. Our result is analogous to but more precise than Ruzsa's result in the integers. We also construct an explicit example of an essential component in $\mathbb{F}_p[t]$ with a small counting function, based on an argument of Wirsing. This is joint work with Thái Hoàng Lê.