

Tao Notes

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1 Inverse Littlewood-Offord Theorems and Gromov-type

1.1 Inverse Theorems

Definition 1.1. *Inverse Theorem A description of objects with some combinatorial properties (i.e. a set that is bounded doubling, polynomial growth).*

Seeks to give a most explicit definition than the input. Keeps as reversible as possible.

More examples:

1. Bounded Doubling ($|A+A| \leq k|A| \Rightarrow \exists$ multinomial arithmetic progression P of rank r , for $r \leq O_k(|A|)$, for $A \subset P$)
- 2.