Analysis Seminar Thursday April 11, 2013

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Title: *Arithmetic Structure in Difference Sets*

Abstract: We will discuss improvements and generalizations of two theorems of Sarkozy, the qualitative versions of which state that any subset of the natural numbers of positive upper density necessarily contains two distinct elements which differ by a perfect square, as well as two elements which differ by one less than a prime number, confirming conjectures of Lovasz and Erdos, respectively. Time permitting, we may also touch on some more recent related work.