

## Special Lectures in Analysis/Number Theory

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A Zero-Density Approach to Smooth Numbers

Adam Harper

University of Montreal

**Date & Time:** Wed, 03/27/2013 - 14:30 - 15:30

**Location:** West Bldg. Lecture Hall

**Video Link:**

<http://video.ias.edu/ANtheory/1213/0327-AdamHarper>

A number is said to be  $y$ -smooth if all of its prime factors are less than  $y$ . Such numbers appear in many places throughout analytic and combinatorial number theory, and much work has been done to investigate their distribution. I will try to explain the similarities and differences between studying the distribution of  $y$ -smooth numbers and of prime numbers, focussing on Bombieri-Vinogradov type results. In particular, I will explain how zero-density results for Dirichlet  $L$  functions can be brought to bear on the smooth number problems, even though there is no explicit formula available as in the case of primes. This allows one to prove results on much wider ranges of  $y$  than were previously available.

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Dorothea Phares

phares@ias.edu

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Tue, 03/12/2013 - 13:50

terms:

- [School of Mathematics](#)