



## Department of Mathematics Colloquium

### The Primes and Additive Models

Lasse Grimmelt

University of Oxford

---

**Abstract:** The Hardy-Littlewood circle method is a powerful tool for additive problems, as it helps separate signal from noise using Fourier analysis. When dealing with sums of primes (or their subsets), recent developments have focused on extracting the signal not from the whole additive problem, but separately for its constituents. This approach allows us to approximate a difficult object, such as the indicator function of the primes, with a less complex model.

In the first half of this talk, I will explain these concepts in accessible terms and introduce useful approximants for the primes. In the second half, I will then sketch how these models play a role in upcoming joint work with J. Teräväinen on sums of two Chen primes.

**Date:** Wednesday, April 16, 2025

**Time:** 16:45-17:45 (GMT+3)

**Place:** Zoom and Mathematics Seminar Room, SA-141

To request the Zoom link, please send an email to [gokhan.yildirim@bilkent.edu.tr](mailto:gokhan.yildirim@bilkent.edu.tr).  
Light refreshments will be served prior to the seminar.