Random multiplicative functions

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Week 8 - Term 3

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MATHEMATICS

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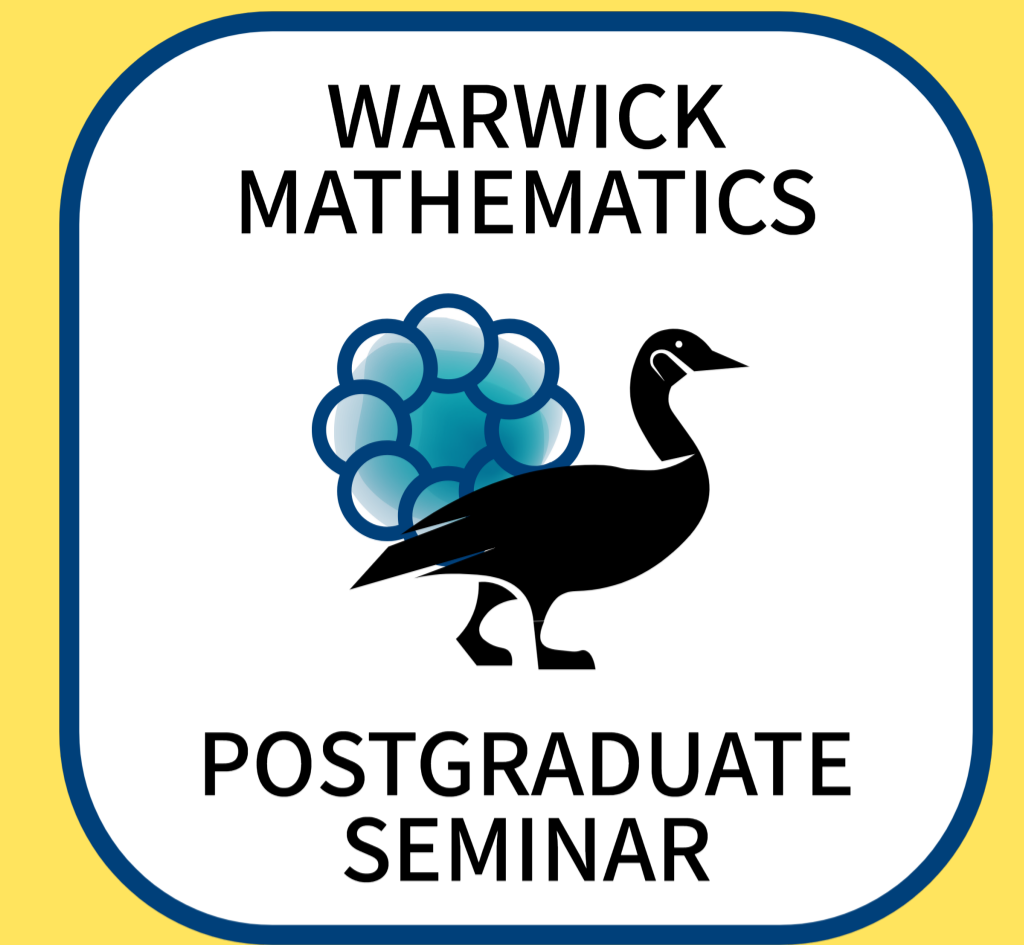
Abstract

The Möbius function is an important function in number theory taking values ± 1 on square-free integers. Classical results in probability theory tell us that if one flips n coins with outcomes ± 1, then their sum is probably not much larger than $n^{1/2}$. Obtaining an analogous result for partial sums of the Möbius function turns out to be equivalent to the Riemann hypothesis.

We will introduce the Möbius function and describe how random multiplicative functions can be used to model the size of its partial sums.

Time

12 pm, 14th June 2023

Location

Room B3.02

Organisers

Alvaro Gonzalez Hernandez
Katerina Santicola