Heilbronn Institute for Mathematical Research

University of BRISTOL

BJB90

22 April 2022

Programme

All times are UK.

Arrival and registration

10:00-10:55

Opening Remarks

10:55-11:00

Tim Browning

11:00-12:00

Full circle

The scope of the Hardy-Littlewood circle method was significantly enlarged through Bryan's 1961 paper on forms in many variables, the effects of which are still reverberating today. When it can be made to work, the methodology takes simple geometric inputs and outputs the answer to almost any arithmetic question one might have about a systems of polynomial equations whose degrees are small enough compared to the

14:00-15:00

Values of L-functions and periods of elliptic curves.

I will begin by illustrating on a simple example how the value of the L-function of an elliptic curve at the point 2 may be interpreted as a period integral associated to an extension, in accordance with Beilinson's conjecture.

However, this extension involves an additional

Coffee Break

15:00-15:30

Jennifer Balakrishnan

15:30-16:30

Quadratic Chabauty for modular curves

We describe how p-adic height pairings can be used to determine the set of rational points on

16:30-17:30

Differences between squares and perfect powers

Diophantine equations involving the difference between a square and an arbitrary perfect power have been studied by elementary means since 1850, and using Baker's theory of linear forms in logarithms since 1960s. We

Wine reception

17:30-19:00