TMS Committee 2018/19

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Find us

Visit our website or join our Facebook group to find out more information about upcoming events and the society.

`tms.soc.srcf.net`

Sponsors

We are proudly sponsored by Jump Trading and G-Research.

TMS Centenary

This academic year marks the 100th anniversary of the TMS, so look out for our special centenary event and dinner in Lent term.

Other things to get excited for include the revival of the Puzzle Hunt, as well as the continuation of excellent talks throughout Michaelmas and Lent.

The Winstanley Lecture Theatre

All of our talks are held in the Winstanley Lecture Theatre, Trinity College, unless stated otherwise.

Walk along Trinity Street to get to the Great Gate entrance of Trinity College. Opposite the Great Gate, there is a gate to Whewell's Court on the side of the street. After the first arch, go up the stone stairs and turn left at the second turn. Once you see some stairs on both your left and right, go up the stairs on the right and the theatre is through the doors.

If you cannot find it, then please ask the porters of Trinity College for directions.

Trinity Mathematical Society
2019 Lent Termcard
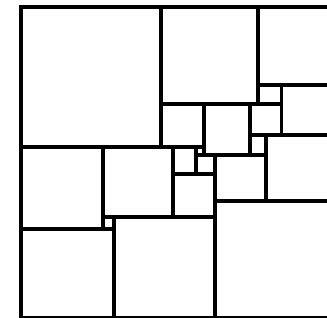
The squared square, a square with integral lengths with small such squares, is the logo of the TMS. Can you work out how to do it?

The Trinity Mathematical Society, or TMS, was founded by a group of undergraduates at Trinity College, Cambridge in 1919 to promote a discussion about subjects of mathematical interest.

The society, we believe, is the oldest surviving subject society at university in the country. At this moment, we have over 800 members across Cambridge.

We hold numerous talks from esteemed academics and industry professionals, who give up an hour of their free time to explain a mathematical topic they are passionate about. We hope to see you there!

Events

Monday 28th January, 8:30PM
Solitons: An Introduction
Dr Anthony Ashton (DAMTP)

Solitons are a very special type of solution to some nonlinear, dispersive PDEs. I will discuss some of the history of solitons, as well as some of their remarkable properties. The talk should take us from canal boats to pseudospherical surfaces, with some mathematics in between.

Monday 4th February, 8:30PM
Are we living in the matrix?
Professor David Tong (DAMTP)

Here is an interesting fact: no one knows how to write down a discretised version of the laws of physics in a manner that allows them to be simulated on a computer. The obstacle is known as the Nielsen-Ninomiya theorem. I will describe this result and some attempts to circumvent it.

Monday 11th February, 8:30PM
The Continuum Hypothesis
Professor Imre Leader (DPMMS)

We'll explore a statement known as the Continuum Hypothesis, which states that there are no 'sizes' of sets between the natural numbers and the reals – or, more precisely, that every uncountable subset of the reals bijects with the reals.

Monday 18th February, 8:30PM
Sum-of-squares proofs
Dr Hamza Fawzi (DAMTP)

A polynomial that is a sum of squares of other polynomials can only take nonnegative values. This trivial observation is surprisingly powerful: many inequalities in mathematics have simple sum-of-squares proofs. I will discuss algorithms that can automatically search for sum-of-squares proofs for polynomial inequalities, and the extent to which they can be considered as automatic proof machines.

Saturday 23rd - Sunday 24th February
TMS Symposium and Centenary Dinner
Various Speakers

The TMS Symposium is a day of lectures, held in the Winstanley Lecture Theatre, about a wide array of mathematical subjects. This year the Symposium will be split over 2 days. The first day will be dedicated to the history of the TMS, with 10 distinguished speakers, representing or talking about each decade of the TMS. The second day will be for current members of the society to talk about their research and contribution to mathematics.

The TMS dinner is an annual tradition, taking place in the Trinity Old Kitchens, where all members of the society are encouraged to join us in celebrating the TMS. This year, in order to mark the special occasion, the Centenary dinner will be a much grander affair. The dinner will be held in the Great Hall with around 200 guests, both past and current members of the society.

The dinner will take place on 23rd February after the first day of the Symposium. We should be releasing tickets near the start of Lent term, so watch our for that and make sure to get your ticket early! Updates released on tms100.uk.

Monday 25th February, 8:30PM
Addition, multiplication, and why they dont get along
Dr Julia Wolf (DPMMS)

The sum-product conjecture, put forward by Erdős and Szemerédi in the 1980s, states that the set of all pairwise sums and the set of all pairwise products of a finite subset of the reals cannot simultaneously be close to minimal in size. Despite the simplicity of its statement and a significant amount of research effort devoted to its resolution, the conjecture remains open to this day. In this talk I will explain the motivation for the conjecture as well as some fascinating partial results.

Monday 4th March, 8:30PM
Elliptical billiards and Poncelet trajectories
Professor Pelham Wilson (DPMMS)

Given an elliptical billiard table, to any ball trajectory which doesn't cross the line segment joining the two foci, there is an associated smaller confocal ellipse inscribed in the trajectory. A Poncelet trajectory is one which is closed after a finite number of bounces. We'll see that if there is one such closed trajectory with n segments, then starting from every point on the outer ellipse, there is a similar closed trajectory with n segments and the same inscribed ellipse, and indeed all these trajectories have the same length Analogous geometric properties hold more generally for any pair of conics in the plane, and in modern terminology the existence of analogous Poncelet polygons is related to the torsion points on an associated elliptic curve.

Monday 11th March, 8:30PM
TBC
Professor Eric Lauga (DAMTP)

TBC