

Friday, 21 November 2025 at 14:15

TU Berlin, Math Building, Straße des 17. Juni 136, Room MA 042

Tea & Cookies starting at 13:00

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Tamás Hausel

(ISTA)

Anatomy of big algebras

Starting with Schrödinger's critique of the difficulty of visualising Heisenberg's matrix quantum physics, Hausel will discuss the notion of non-commutative matrices and its use in particle physics via Gell-Mann's eightfold way describing heavy particles in terms of quarks.

He will then use this background to motivate his recent work on big algebras – commutative avatars of non-commutative matrix representations – and show some visualizations of them to highlight their complex anatomy, shedding some new light on the quantum numbers of the heavy particles in the baryon octet and decuplet.

Tamás Hausel has been full professor of mathematics at the Institute of Science and Technology Austria (ISTA) since 2016. He earned his PhD in Pure Mathematics at the Trinity College in Cambridge in 1998, under the supervision of Nigel Hitchin. Following postdoctoral appointments in Princeton and as a Miller Research Fellow in Berkeley, he joined the University of Texas at Austin in 2002, where he was promoted to associate professor in 2006. In 2007, he moved back to the UK, holding a Tutorial Fellowship at Wadham College and a Royal Society University Research Fellowship at the University of Oxford. From 2012 to 2016, he was a professor at École Polytechnique Fédérale de Lausanne (EPFL) before taking up his current position in Austria.