



Berlin
Mathematical
School

BMS Days 2014

Tuesday 18 February 2014

BMS Loft, Urania, An der Urania 17, 10787 Berlin

11:10 Francis Brown (CNRS & IHÉS)

15:30 Caren Tischendorf (HU Berlin)

Francis Brown: Irrationality proofs

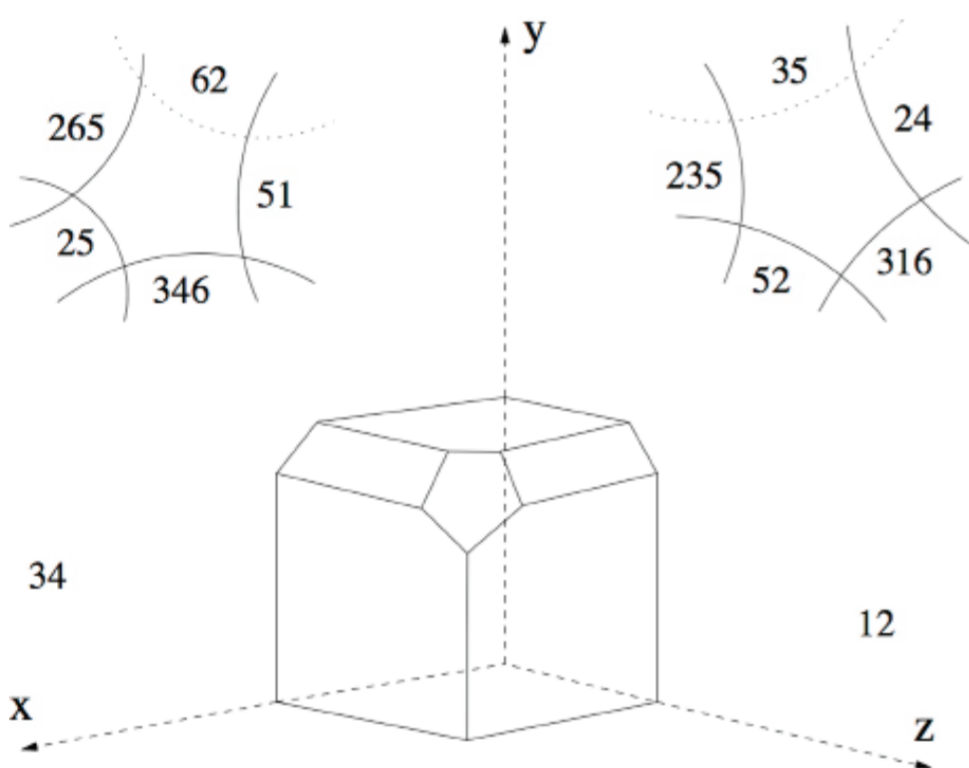
The irrationality of certain algebraic numbers, such as the square root of 2, have been known since antiquity. The corresponding problem for periods (certain numbers defined as integrals), such as π , is much more difficult. Brown will explain the basic ingredients of an irrationality proof and discuss R. Apéry's famous, and totally unexpected, result from 1979 that $\zeta(3)$ is irrational. He will then give a very simple interpretation of the geometry underlying his proof.

Brown is a French mathematician and his main research area is number theory. He is a researcher at *Le Centre national de la recherche scientifique* (CNRS) and a long-term visitor at *L'Institut des hautes études scientifiques* (IHÉS). In 2012, he received both the CNRS Bronze Medal and the *Prix Élie Cartan* award from the French Academy of Sciences.

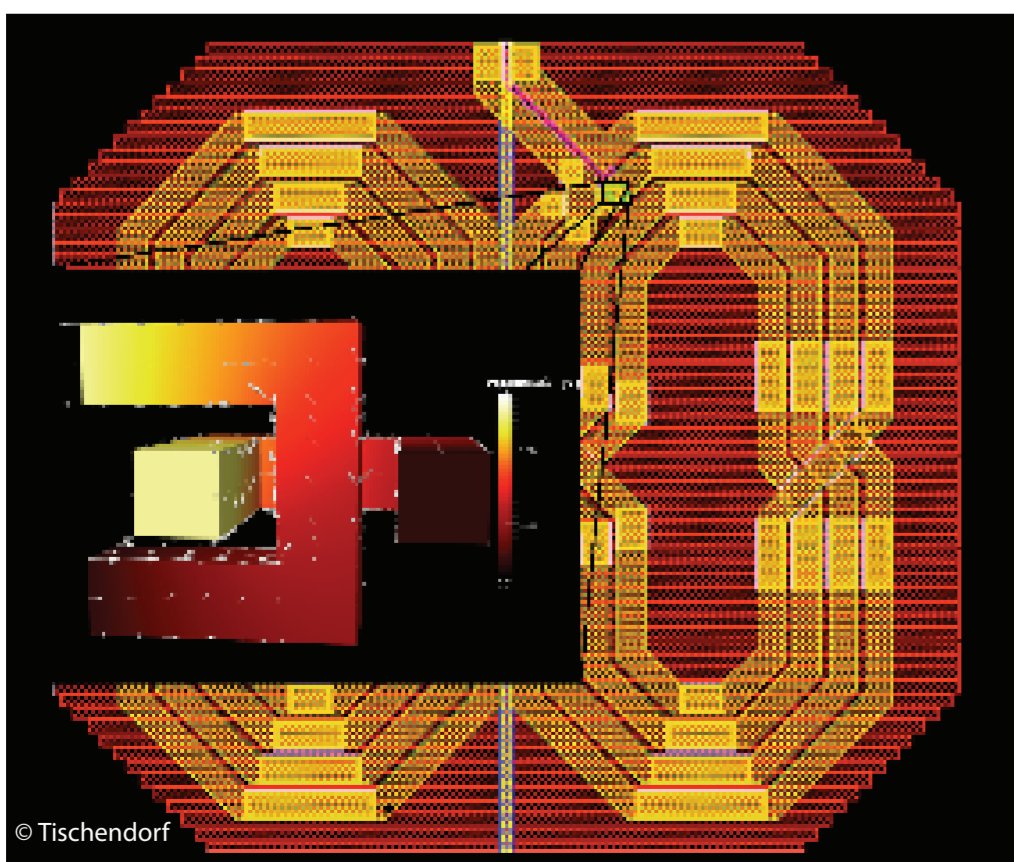
Caren Tischendorf: Modeling and simulation with partial differential algebraic equations

Partial differential algebraic equations are coupled systems of partial and ordinary differential equations with algebraic constraints. They are used for modeling dynamical processes in several applications: electronics, medicine, gas and hydraulic engineering, vehicle analysis, aerospace dynamics, etc. Tischendorf will present a structural analysis for such systems and discuss numerical simulation approaches to solve them.

Tischendorf is a MATHEON research professor and professor of applied mathematics at HU Berlin. Her main research area is numerical analysis. She completed her doctorate in 1996 and her habilitation in 2004, both at HU Berlin. From 2006-2012, she was a professor at the University of Cologne.



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