



Berlin
Mathematical
School

BMS Friday Colloquium

Friday 2 November 2012 at 14:15

Tea & Cookies starting at 13:00

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

Joachim Schwermer

(U Wien)

On arithmetically defined hyperbolic 3-manifolds

An orientable hyperbolic 3-manifold is isometric to the quotient of hyperbolic 3-space \mathbf{H} by a discrete torsion-free subgroup of the group of orientation-preserving isometries of \mathbf{H} . Among these manifolds, the ones originating from arithmetically defined groups form a family of special interest. Due to the underlying connections with number theory and the theory of automorphic forms, there is a fruitful interaction between geometric and arithmetic questions, methods and results. We intend to give an account of some recent investigations in this area, in particular, of those pertaining to the construction of non-trivial homology classes. The case of a compact 3-dimensional hyperbolic manifold of arithmetic type offers still some challenging problems.

Joachim Schwermer is a professor of mathematics at the University of Vienna, specializing in number theory, geometry of arithmetic varieties, automorphic forms and L-functions. He is also a keen researcher of the history of mathematics. After qualifying as a lecturer in Bonn in 1982, he became a professor at the Catholic University of Eichstätt in 1986, and was later a professor at the University of Düsseldorf. In 1987, he was awarded the Gay-Lussac-Humboldt-Preis, a Franco-German Science Award, which recognises excellent researchers, who have made an outstanding contribution to science and who also support cooperation between the two countries. He is currently director of the Erwin Schrödinger Institute for Mathematical Physics and is a member of the Scientific Advisory Board of the BMS.