



Berlin
Mathematical
School

BMS Women In Mathematics

Lecture Series



20 November 2012 at 17:15

Tea and cookies will be served after the lecture

HU Berlin, 1.023, Rudower Chaussee 25, 12489 Berlin

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Eisenstein Series

A well-known theorem of Lagrange states that every natural number n can be represented as the sum of four integer squares. The total number of such representations is given by an explicit formula in terms of the divisors of n . The proof of this formula is carried out by means of Eisenstein series, which are generalizations of periodic functions and encode interesting arithmetic information in their Fourier coefficients.

Nowadays, manifold types of Eisenstein series arise in mathematics with numerous applications to number theory and arithmetic geometry. In this talk, we first introduce and highlight the classical Eisenstein series. Then, we investigate Eisenstein series which are associated to special points on hyperbolic Riemann surfaces. We employ these series to construct a metric for the moduli space of hyperbolic Riemann surfaces of genus g with marked points and we will discover their relation to an arithmetic Riemann-Roch isometry.

Anna von Pippich studied mathematics and philosophy in Leipzig, Paris and Berlin. In 2010, she completed her PhD on „The arithmetic of elliptic Eisenstein series“. After research stays in Zürich, Basel and Berlin, she is currently a substitute professor at the mathematical institute of the Georg-August University Göttingen.

