



Berlin Mathematical School

BMS Fridays Colloquium

Friday, November 9, 2007, 2:00 pm

Tea before the lecture starts at 1 pm

BMS Loft, **Urania**

An der Urania 17, 10787 Berlin



Rainer Weissauer (Heidelberg):

“Coverings of Riemann surfaces and a new kind of Galois groups”

Let X, Y be Riemann surfaces, i.e. compact connected complex manifolds of dimension 1. Then a nonconstant holomorphic map $f : X \rightarrow Y$ between the two Riemann surfaces is a branched covering of the Riemann surface Y . By the covering map f the field $\mathbb{C}(X)$ of meromorphic functions on X becomes a finite field extension of the field $\mathbb{C}(Y)$ of meromorphic functions on Y . This field extension in principle determines f . In fact the tower of all branched coverings of Y can be described by the tower of all finite Galois extensions of the field $\mathbb{C}(Y)$.

The aim of Professor Weissauer's talk is to explain this, and how one can refine this well known construction by introducing refined Galois groups attached to the branched coverings, which contain more geometric information than the ordinary Galois groups.

Rainer Weissauer, a former vice-president of Mannheim University, is a number theorist and algebraist from Heidelberg — and the managing editor of *Crelle's Journal*, the oldest active mathematical periodical, founded in 1826.

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