Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

Dienstag, 3. Mai 2016

17 Uhr s.t., Geom H4

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Computing Belyi Maps

Abstract:

Dessins d'enfants and their realization as Belyi maps of compact Riemann surfaces were originally discovered by Felix Klein. Their importance and relevance was finally understood by Alexander Grothendieck who rediscovered and named them in his "Esquisse d'un programme" in 1984. The most important aspect of dessins is the operation of the absolute Galois group on them. Accordingly, dessins d'enfants provide fascinating insights and fundamental links between different fields of mathematics like inverse Galois theory, Teichmüller spaces, hypermaps, algebraic number theory and mathematical physics. The related problem of the construction of Riemann surfaces with given automorphism group turns out to be rather challenging.

In my talk I will discuss methods for constructing Belyi maps explicitly. As a nontrivial example we have calculated the Belyi map which realizes the Mathieu group M_{24} as the Galois group of a three-point ramified cover over $\mathbb{P}^1_{\mathbb{C}}$ and the corresponding hauptmodul which might give some insight concerning the "Mathieu moonshine".

Vor dem Vortrag (ab 16.30 Uhr) stehen im Raum 327 Kaffee und Tee bereit.