Introduction to the Langlands program

Prof. Dr. Timo Richarz

Time and Place

Lecture: Tuesdays, 13:30 – 15:10 via Zoom, starting November 3rd
Exercises: Thursdays, 13:30 – 15:10, dates: 12.11, 26.11, 10.12, 14.01, 28.01, 11.02

The course is given in English or German depending on the audience preferences. In case you are interested in participating, please contact the lecturer directly via email (e.g. „I am interested in participating.“). You will then be added to the mailing list.

Contents

The Langlands program is a web of far reaching conjectures connecting representation theory, number theory and algebraic geometry. It roughly states, among other things, that number-theoretically defined L-functions are the same as representation-theoretically defined, so called, automorphic L-functions. This vastly generalizes Artin's reciprocity law in class field theory. The aim of this course is to formulate the Langlands conjectures and to give some elementary examples.

Prerequisites

Number theory, linear algebraic groups, algebraic geometry. If you have further questions, please contact the lecturer directly via email.

Literature

- J. Anschütz, Lecture notes for an introductory course on the Langlands program, available here.
- J. Bernstein, S. Gelbart, An Introduction to the Langlands Program, Birkhäuser (2004).
- J. Getz, H. Hahn, An Introduction to Automorphic Representations, available here.

Exam

This is an oral exam. If you like to take the exam, please contact the lecturer directly via email.