

Automorphic Representations

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In this course I will describe some basic facts about automorphic forms and automorphic representations.

I will start with the classical theory of modular functions.

Then I will show how they could be described using the language of automorphic representations for the Group $GL(2, \mathbb{R})$.

I will discuss the notion of Hecke operators and show their interpretation using automorphic representations of the adèle group $GL(2, \mathbb{A})$.

In particular, I am planning to discuss L-functions attached to automorphic representations.

Time permitting I will discuss automorphic representations of higher rank groups and give a short exposition of Langlands' program.

Books

Roughly I will follow the book by S. Gelbart "Automorphic Forms on Adele Groups".

I will also try to incorporate into the course different topics from the book "An introduction to the Langlands program" (editors J. Bernstein and S. Gelbart).