52nd Seminar Aachen-Bonn-Köln-Lille-Siegen on Automorphic Forms

Max-Planck-Institut für Mathematik in Bonn, November 22, 2017

Board:
K. Bringmann, J. Bruinier, V. Gritsenko, A. Krieg, P. Moree, G. Nebe, N-P. Skoruppa, S. Zwegers

This is the 52nd meeting of the joint French-German intercity seminar on automorphic forms. Everybody who is interested in automorphic forms is welcome. We encourage in particular young researchers to participate and to report on their work in one of our meetings. For further informations concerning this meeting please send an email to moree@mpim-bonn.mpg.de

When: Wednesday, November 22, 2017
Where: Max-Planck-Institut für Mathematik
Vivatsgasse 7, 53111 Bonn, MPI Lecture Hall
Organizer: Pieter Moree

Schedule

14:00 – 14:50	Nicole Raulf (Univ. Lille) On a mean value result for a product of L-functions
15:00 – 15:50	Hiroki Aoki (Tokyo Univ. of Science) On the structure of mixed weight Hilbert modular forms
16:00 – 16:30	– *tea time* –
16:30 – 17:20	Robert Pollack (Boston Univ./MPIM) Computing weight 1 forms – a p-adic approach
18:00 –	– *dinner* –

Abstracts

Nicole Raulf (Univ. Lille)

On a mean value result for a product of L-functions

The asymptotic behaviour of moments of L-functions is of special interest to number theorists and there are conjectures that predict the shape of the moments for families of L-functions of a given symmetry type. However, only some results for the first few moments are known. In this talk we will consider the asymptotic behaviour of the first moment of the product of a Hecke L-function and a symmetric square L-function. This is joint work with O. Balkanova, G. Bhowmik, D. Frolenkov.

Hiroki Aoki (Tokyo Univ. of Science)

On the structure of mixed weight Hilbert modular forms

In this talk we discuss joint work with Sho Takemori on Hilbert modular forms over the real quadratic field of discriminant 5, with respect to its full modular group. The graded ring of all Hilbert modular forms of parallel weight was determined by Gundlach. By using his result and some elementary technique, we establish a structure theorem on mixed weight Hilbert modular forms.

Robert Pollack (Boston Univ./MPIM)

Computing weight 1 forms – a p-adic approach

The computation of Hecke-eigenforms of weight at least 2 is readily accomplished through the theory of modular symbols as these Hecke-eigensystems occur in the cohomology of modular curves. However, the same is not true for weight 1 modular forms which makes computing the dimensions of such spaces difficult let alone the actual system of Hecke-eigenvalues. Recently effective methods for computing such spaces have been introduced building on an algorithm of Kevin Buzzard. In this talk, we present a different, p-adic approach towards computing these spaces which yields upper bounds on both their dimension and on the systems of Hecke-eigenvalues which they can contain.