One-day workshop on p-adic families of modular forms

Cardedeu (Barcelona), Friday May 19th, 2017.

Schedule:

10:11:30 Xavier Guitart (UB). **Title: Title:** The Elliptic Stark Conjecture.

12:00-13:30 Adel Betina (UPC). **Title:** Ramification of the eigencurve at classical RM points.

13:30 - 15:00 Coffee break -lunch*

15:15-16:45 Yiwen Ding (Imperial College, London). **Title:** p-adic modular forms over unitary Shimura curves

17:15-18:45 Daniel Barrera (UPC). **Title:** Triple product p-adc L-functions.

19:00-20:00 Coffee break -dinner*

20:15-21:15 Marc Masdeu (UAB, Bellaterra). **Title:** p-adic families of modular symbols

*Lunch and dinner will be covered by ERC's Consolidator Grant BSD held by Victor Rotger at UPC.

Abstracts:

Xavier Guitart
The aim is to give an introduction to the so-called Elliptic Stark Conjecture for elliptic curves over the rationals, which relates p-adic iterated integrals of a triple of modular forms to logarithms of algebraic points in certain rank 2 situations.

Adel Betina
J.Bellaïche and M.Dimitrov have shown that the p-adic eigencurve is smooth but not étale over the weight space at p-regular theta series attached to a character of a real quadratic field F in which p splits. We prove in this paper the existence of an isomorphism between the subring fixed by the Atkin-Lehner involution of the completed local ring of the eigencurve at these points and an universal ring representing a pseudo-deformation problem, and one gives also a precise criterion for which the ramification index is exactly 2.
We finish this paper by proving the smoothness of the nearly ordinary and ordinary Hecke algebras for Hilbert modular forms over F at the overconvergent cuspidal Eisenstein points which are the base change lift for GL(2)/F of these theta series. Our approach uses deformations and pseudo-deformations of reducible Galois representations.

Yiwen Ding

We study some p-adic properties of modular forms over unitary Shimura curves, including a description of their relation with automorphic representations via p-adic Hodge theory, overconvergence and classicality, and p-adic families. We also discuss p-adic aspects of the Galois representations associated to our modular forms.

Daniel Barrera

We consider three Coleman families of modular forms and we would like to construct a p-adic L-function interpolating the algebraic part of central values of the triple product L-function attached to these families and classical weights. In this context there are more than one natural interpolation problems, and we can classify them in two types: balanced and unbalanced. In this talk, we will explain the Greenberg-Seveso's approach to solve the interpolation problems in the balanced case. This approach heavily relies on the nice

overconvergent cohomology modules introduced by Ash and Stevens. Finally we would like to point out that one interesting fact that we find in this situation is that one single interpolation problem is solved by different p-adic L-functions at the same time.

Marc Masdeu

I will give an introduction to the subject, concentrating on the more concrete and explicit aspects of modular symbols in families. The goal is to give all the basic facts in a way that is easy to digest for the audience.