LTCC Advanced Course

Title: Explicit inertial Langlands correspondence for GL (2)

Basic Details:

- Core Audience (1st yr or 2nd/3rd yr: pure):
- Course Format (**Extended**: 5 x 2hr lectures)

Course Description:

- Keywords: Smooth representations, Local Langlands, Inertial types.
- Syllabus:

Abstract: In this minicourse, we will describe an algorithmic approach to the inertial Langlands correspondence for GL(2). We will start with a review of the correspondence in the theoretical setting, then we will explain how one can rewrite it in a way that is suitable for computer implementation. We will illustrate our presentation with as many examples as possible. Our main reference will be the book by Bushnell and Henniart.

1. Quaternions algebras over local fields
2. Admissible and smooth representations over GL(2)
3. Weil-Deligne Representations and inertial types
4. Local Langlands correspondence for GL(2)
5. Algorithms for computing smooth representations
6. Algorithms for computing with Brauer-Grothendieck rings
7. Algorithms for inertial local Langlands correspondence

- Recommended reading: The course will be as self-contained as possible. But it would be helpful to have a look at the following sections in "The local Langlands correspondence for GL(2)," Bushnell and Henniart: Chapter 1; Chapter 7, Sections 28-29; Chapter 8, Section3; and Chapter 13.
- Additional Optional reading: Local fields, Jean-Pierre Serre
- Prerequisites: Algebraic number theory

Format:

- No of discussion/problem sheets (typically 4 for with solutions):
- Electronic lecture notes (these are strongly encouraged, as they will form the core of the individual study of the students):
- Necessary support facilities:

Lecturer Details:

- Lecturer: Lassina Dembélé
- Lecturer home institution: King's College London
- Lecturer e-mail: lassina.dembele@kcl.ac.uk