

# Topics on p-adic Langlands

Prof. Benjamin Schraen<sup>1</sup>, Prof. Stefano Morra<sup>2</sup>

<sup>1</sup>*CNRS (Centre National de la Recherche Scientifique)  
Université de Versailles, France  
Email: benjamin.schraen@uvsq.fr*

<sup>2</sup>*Department of Mathematics,  
University of Toronto, Canada  
Email: .....*

**Timetable:** 20 hrs. First lecture on February 10, 2015 (dates already fixed, see the calendar), Torre Archimede, Room 2BC/30.

**Course requirements:**

**Examination and grading:**

**SSD:** MAT/0

**Aim:**

**Course contents:**

We will especially focus on explaining links between locally analytic representations and families of  $(\phi, \Gamma)$ -modules. We will begin with more elementary lectures on deformation rings.

The lectures will be held according to the following program:

1. Introduction to local correspondences, with a focus on modular forms
2. Generalities on mod  $p$  representations
3. Generalities on p-adic representations
4. Locally analytic representations
5. A semi-simple mod  $p$  correspondence for  $GL_2(\mathbb{Q}_p)$
6. The p-adic correspondence for  $GL_2(\mathbb{Q}_p)$ , statements, no proofs
7. Automorphic p-adic forms
8. Emerton-Jacquet modules and eigenvarieties
9. Trianguline Galois representations
10. ...let see later...

**Other information:**

The course will be integrated by a series of more elementary and introductory lectures by Stefano Morra (Univ. Montpellier-IHES): these lectures will be addressed also to Master students.

For any information: Bruno Chiarellotto