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# Schedule

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## Monday:

*9:00-9:30* Registration  
*9:30-10:00* Opening ceremony  
*10:00-10:45* Wee Teck Gan (National University of Singapore)  
*10:45-11:15* Coffee break  
*11:15-12:00* Atsushi Ichino (Kyoto University)  
*12:30-14:00* Lunch  
*14:00-14:45* Gil Moss (Univeristy of Utah)  
*15:00-15:45* Jean-François Dat (UPMC)  
*15:45-16:15* Coffee break  
*16:15-17:00* Vincent Secherre (Université de Versailles)  
*20:00* Official dinner

## Tuesday:

*9:00-9:45* Colette Moeglin (CNRS)  
*10:00-10:45* Guy Henniart (Université Paris Sud)  
*10:45-11:15* Coffee break  
*11:15-12:00* Olivier Taïbi (Imperial College)  
*12:30-14:00* Lunch  
*14:00-14:45* Gaetan Chenevier (CNRS)  
*15:00-15:45* Erez Lapid (Weizmann Institute)  
*15:45-16:15* Coffee break  
*16:15-17:00* Marko Tadic (University of Zagreb)

**Wednesday:** Free Day.

## Thursday:

*9:00-9:45* Tobias Berger (University of Sheffield)  
*10:00-10:45* Pierre-Henri Chaudouard (Université Paris 7 - Denis Diderot)  
*10:45-11:15* Coffee break  
*11:15-12:00* Gordan Savin (University of Utah)

*12:30-14:00* Lunch

*14:00-14:45* Yianis Sakellaridis (Rutgers)

*15:00-15:45* Nadir Matringe (Université de Poitiers)

*15:45-16:15* Coffee

**Friday:**

*9:00-9:45* Fabian Januszewski (KIT)

*10:00-10:45* Shusuke Yamana (Kyoto University)

*10:45-11:15* Coffee break

*11:15-12:00* Ramla Abdellatif (Université de Picardie Jules Verne)

*12:30-14:00* Lunch

*14:00-14:45* Eugen Hellmann (Universität Münster)

*15:00-15:45* Christophe Cornut (CNRS)

*15:45-16:15* Coffee

*20:00* Closing dinner

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## Abstracts

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**Ramla Abdellatif** (Université de Picardie Jules Verne) :

**Abstract:**

**Tobias Berger** (University of Sheffield) : *Deformations of Saito-Kurokawa type*

**Abstract:** I will report on work in progress with Kris Klosin on the modularity of 4-dimensional  $p$ -adic representations whose reductions modulo  $p$  are of Saito-Kurokawa type. I will explain, in particular, how this can be used in certain cases to verify Brumer and Kramer's paramodular conjecture for abelian surfaces over  $\mathbf{Q}$  with a rational torsion point of order  $p$ .

**Pierre-Henri Chaudouard** (Université Paris 7 - Denis Diderot) :

**Abstract:**

**Gaetan Chenevier** (CNRS) :

**Abstract:**

**Christophe Cornut** (CNRS) : *(Towards) a new Euler System.*

**Abstract:** We construct a new Euler system generalizing Heegner points, using the spherical pair  $U(n-1, 1)$  inside  $SO(2n-1, 2)$  instead of  $U(1)$  inside  $SO(1, 2)$ .

**Jean-François Dat** (UPMC) : *On Jordan decomposition for smooth representations of  $p$ -adic groups.*

**Abstract:** We will review recent progress on the problem of splitting the category of smooth, possibly modular or integral, representations of a  $p$ -adic group in terms of Langlands parameters from the inertia or wild inertia subgroup, and on the expected functoriality of such decompositions.

**Wee Teck Gan** (National University of Singapore) : *Triality and Functoriality.*

**Abstract:** We discuss how the principle of triality implies certain instances of Langlands functoriality rather cheaply. This is joint work with Gaetan Chenevier.

**Eugen Hellmann** (Universität Münster) : *A local model for the trianguline variety and applications to  $p$ -adic automorphic forms.*

**Abstract:** We investigate overconvergent  $p$ -adic automorphic forms (of finite slope) on definite unitary groups. In particular (under mild technical assumptions) we prove a strong classicality criterion and determine all “companion forms” of a given classical form (i.e. all  $p$ -adic forms that have the same system of Hecke-eigenvalues). The main method is to transfer these statements to questions about the geometry of a space parametrizing certain  $p$ -adic Galois

representations of a local Galois group. We give a complete description of the local geometry of this space using that it is equi-singular to a scheme defined in terms of linear algebraic groups. This 'local model' also allows us to prove a Breuil-Mezard-type multiplicity formula for certain cycles in the deformation space of a crystalline Galois representation. This is joint work with C. Breuil and B. Schraen.

**Guy Henniart** (Université Paris Sud) :

**Abstract:**

**Atsushi Ichino** (Kyoto University) : *The Shimura-Waldspurger correspondence for  $\mathrm{Mp}(2n)$ .*

**Abstract:** In his 1973 paper, Shimura established a lifting from half-integral weight modular forms to integral weight modular forms. After that, Waldspurger studied this in the framework of automorphic representations and described the tempered part of the automorphic discrete spectrum of the metaplectic group  $\mathrm{Mp}(2)$ , which is a nonlinear double cover of  $\mathrm{SL}(2)$ , in terms of that of  $\mathrm{PGL}(2)$ . We generalize this to the metaplectic group  $\mathrm{Mp}(2n)$  of higher rank. This is joint work with Wee Teck Gan.

**Fabian Januszewski** (KIT) :  *$p$ -adic  $L$ -functions and non-vanishing of central  $L$ -values.*

**Abstract:** I will present recent results on the existence and properties of  $p$ -adic  $L$ -functions for the groups  $\mathrm{GL}(n+1) \times \mathrm{GL}(n)$  and  $\mathrm{GL}(2n)$ . As an application, I will discuss generic non-vanishing for central  $L$ -values for these groups. The case of  $\mathrm{GL}(2n)$  is joint work with Mladen Dimitrov and A. Raghuram.

**Erez Lapid** (Weizmann Institute) :

**Abstract:**

**Nadir Matringe** (Université de Poitiers) :

**Abstract:**

**Colette Mœglin** (CNRS) : *On some local aspects of Arthur's theory.*

**Abstract:** TBA

**Gill Moss** (University of Utah) : *Toward local Langlands in families for quasi-split classical groups*

**Abstract:** In 2012 it was conjectured by Emerton and Helm that the local Langlands correspondence for  $\mathrm{GL}(n)$  of a  $p$ -adic field (suitably normalized) should interpolate in  $l$ -adic families, where  $l$  is a prime different from  $p$ . This conjecture was reformulated, and eventually proved, in terms of the existence of an appropriate map from the integral Bernstein center to a Galois deformation ring. In this talk we will first describe the results for  $\mathrm{GL}(n)$ , then present work in progress, joint with Dat, Helm, and Kurinczuk, toward formulating the analogous conjecture for quasi-split classical groups.

**Yianis Sakellaridis** (Rutgers) : *The Selberg trace formula revisited.*

**Abstract:** The goal of this talk is to present an alternative proof of the Selberg trace formula, which provides a conceptual explanation for the discrete contributions of the continuous spectrum, and can probably be generalized in order to develop a general relative trace formula. To compute the trace of a convolution operator, or equivalently the Hilbert-Schmidt inner product of two such operators, we show that their kernel functions are "asymptotically finite" functions on  $(\Gamma \backslash G)^2$ . The trace formula then becomes equivalent to a "Plancherel formula" for such functions.

**Gordan Savin** (University of Utah) : *Bessel spaces as Hecke algebra modules.*

**Abstract:** Following a suggestion of Sol Friedberg, as a spin-off to our previous work, we describe the spaces of certain Bessel models by explicit Iwahori Hecke algebra modules. This has consequences to the GGP restriction problem as well as to Prasad's Ext-version of the problem. This is a joint work with K.Y. Chan.

**Vincent Sécherre** (Université de Versailles) : *The congruence properties of the local Jacquet-Langlands correspondence and applications.*

**Abstract:** I will describe the congruence properties of the Jacquet-Langlands correspondence, and explain how these congruence properties help to describe this correspondence explicitly.

**Marko Tadić** (University of Zagreb) : *On classifying irreducible unitary representations of classical  $p$ -adic groups.*

**Abstract:** J. Arthur has classified irreducible tempered representations of classical  $p$ -adic groups. C. Moeglin has singled out parameters of cuspidal representations among them. Further she gave a simple formula for cuspidal reducibilities (basic assumption). Therefore, we have a classification of some of the most essential ingredients of the representation theory of these groups. In our talk we shall propose how to use these data in the direction of classifying irreducible unitary representations of classical  $p$ -adic groups. By the present knowledge, which is pretty limited, the key information for this is (essentially only) the cuspidal reducibility point. We have checked that the knowledge of only the reducibility point is sufficient for the unitarizability in the generalized rank (up to) three (it is also sufficient for the spherical and for the generic cases).

**Olivier Taïbi** (Imperial College) : *Cohomology of local systems on  $A_g$  and conductor one spin Galois representations.*

**Abstract:** Let  $A_g$  be the moduli stack of principally polarized abelian varieties, i.e. the Siegel modular variety in level one ( $\mathrm{Sp}_{2g}(\mathbf{Z})$ ). I will present the explicit description of the cohomology (usual and intersection) of local systems on  $A_g$  using the Langlands-Kottwitz method, in terms of certain GSpin-valued Galois representations. Morel worked out the "geometric side" (without assumption on the level), so this talk will be about the spectral and Galois sides.

**Shusuke Yamana** (Kyoto University) : *On the lifting of endoscopic cusp forms on  $U(3)$  to cusp forms on  $U(4m+3)$ .*

**Abstract:** I associate to a cusp form on  $U(2)$  a cusp form on  $U(4m+2)$ . This is a generalizations of the lifting of an elliptic cusp form to Hermitian cusp forms constructed by Ikeda from imaginary quadratic fields to CM fields and from quasisplit unitary groups to more general unitary groups. Moreover, I attach to an endoscopic cusp form on  $U(3)$  a cusp form on  $U(4m+3)$ . This is a generalizations of the endoscopic  $L$ -packets constructed by Gelbart, Rogawski and Soudry from three variables to more variables. If time permits, I will give a geometric application.