

# SOAR Seminar

(South Osaka Automorphic Representation Seminar)

南大阪保型表現セミナー

2016年2月12日(金)・13日(土)

大阪市立大学杉本キャンパス 理学部F棟4階F415(中講究室)

<http://www.osaka-cu.ac.jp/ja/about/university/access#sugimoto> (12番が理学部棟)

世話人：古澤 昌秋 (大阪市立大学)

## プログラム

### 2月12日(金)

13:15 - 14:00 Aaron Pollack (Stanford University)

*The Spin L-function on  $\mathrm{GSp}(6)$  for Siegel modular forms I*

14:10 - 14:55 Aaron Pollack (Stanford University)

*The Spin L-function on  $\mathrm{GSp}(6)$  for Siegel modular forms II*

15:15 - 16:15 森本 和輝 (京都大学)

*On the irreducibility of global descents for even unitary groups and its applications*

16:30 - 17:30 山名 俊介 (京都大学)

*On the lifting of Hilbert cusp forms to holomorphic cusp forms on quaternionic unitary groups*

### 2月13日(土)

9:40 - 10:40 跡部 発 (京都大学)

*Local theta correspondence and local Langlands correspondence*

10:50 - 11:35 Aaron Pollack (Stanford University)

*Rankin-Selberg integrals for non-unique models I*

11:45 - 12:30 Aaron Pollack (Stanford University)

*Rankin-Selberg integrals for non-unique models II*

## 要旨

### 跡部 発

#### *Local theta correspondence and local Langlands correspondence*

In this talk, we give an explicit determination of the theta lifting for symplectic-orthogonal dual pairs over a nonarchimedean field of characteristic zero. We determine when theta lifts of tempered representations are nonzero, and determine the theta lifts in terms of the local Langlands correspondence.

### 森本 和輝

#### *On the irreducibility of global descents for even unitary groups and its applications*

Ginzburg, Rallis and Soudry established the theory of global descents for quasi-split classical groups and metaplectic groups. It is expected that the global descents are irreducible, but it is not proved in general. In this talk, we prove this irreducibility for even unitary groups. As a global application of this irreducibility, we show a rigidity theorem for generic cuspidal automorphic representations of even unitary groups. Moreover, as a local application, we prove a local converse theorem for generic supercuspidal representations of even unitary groups.

### Aaron Pollack

#### *The Spin $L$ -function on $\mathrm{GSp}(6)$ for Siegel modular forms*

I will discuss a Rankin-Selberg integral that unfolds to the partial spin  $L$ -function of cuspidal automorphic representations of  $\mathrm{PGSp}(6)$ . When the automorphic representation corresponds to a level one Siegel modular form, we deduce the finiteness of poles and functional equation of the completed  $L$ -function. The Rankin-Selberg convolution makes use of the construction used by Freudenthal to explicitly realize the exceptional group  $E_7$ . Also involved is the arithmetic invariant theory of orders in quaternion algebras.

#### *Rankin-Selberg integrals for non-unique models*

I will discuss some Rankin-Selberg integrals on the groups  $\mathrm{GSp}(4)$ ,  $\mathrm{GU}(2, 2)$ , and  $\mathrm{GSp}(6)$  that unfold to non-unique models. The integrals are generalizations of an integral considered by Kohnen and Skoruppa that produces the spinor  $L$ -function for Siegel modular forms on  $\mathrm{GSp}(4)$ . The integrals also appear to be connected to previously considered Rankin-Selberg convolutions in two complex variables that unfold to the Whittaker model. This is joint work with Shrenik Shah.

### 山名 俊介

#### *On the lifting of Hilbert cusp forms to holomorphic cusp forms on quaternionic unitary groups*

Starting from a Hilbert cusp form, I will construct holomorphic cusp forms on inner forms of symplectic or orthogonal groups. In the symplectic case this is a transfer of the Ikeda lifting.