

SYMPOSIA

The Hayashibara Forum

Representation Theory and Homogeneous Spaces
July 27 - August 1, 1997, at the Fujisaki Institute,
Hayashibara Biochemical Laboratories, Inc., Okayama

Organizing Committee

M. Kashiwara, T. Kobayashi, K. Nishiyama, T. Oshima

Program

July 27 (Sunday):

18:00 - registration
19:00 - 21:00 opening party

July 28 (Monday):

9:45-10:45
Bertram Kostant (MIT)
The \mathfrak{g} -module structure of $\wedge \mathfrak{g}$ and discrete series representations

11:15-12:15
Takayuki Oda (Univ. Tokyo)
Matrix coefficients of certain principal series representations of $SU(2, 2)$

14:00-14:45
Alexei Venkov (St-Petersbourg Dept. of Steklov Math. Inst.)
The spectrum of the automorphic Laplacian for subgroups of the modular group $PSL(2, \mathbb{Z})$

15:00-15:45
Toshihiko Matsuki (Kyoto Univ.)
Two involutions on Lie groups and root systems

July 29 (Tuesday):

9:45-10:45
Jeffrey Adams (Univ. Maryland)
Characters of non-linear groups

11:15-12:15
Toshiyuki Kobayashi (Univ. Tokyo)
Restriction of unitary representations of reductive Lie groups

14:00-14:45
Jian-Shu Li (Univ. Maryland)
Discrete spectrum of dual pairs and cohomology of arithmetic manifolds

15:00-15:45

Hisayosi Matumoto (Univ. Tokyo)

Unitary degenerate series of real reductive Lie groups

16:15-17:00

Eng-Chye Tan (National Univ. of Singapore)

On the theta lift for the trivial representation

July 30 (Wednesday):

9:45-10:45

Hiraku Nakajima (Kyoto Univ.)

Hilbert schemes of points on surfaces and vertex algebras

11:15-12:15

Olivier Mathieu (IRMA, Univ. Louis Pasteur)

Modular representations of $GL(n)$

July 31 (Thursday):

9:45-10:45

Toshio Oshima (Univ. Tokyo)

Differential equations for degenerate principal series

11:15-12:15

Wilfried Schmid (Harvard Univ.)

Automorphic distributions

14:00-14:45

Hideko Sekiguchi (Kobe Univ.)

The Penrose transform and singular unitary representations

15:00-15:45

Kyo Nishiyama (Kyoto Univ.)

Schur duality for Cartan type Lie algebra W_n

16:15-17:00

Eric M. Opdam (Univ. Leiden)

Spectral decomposition of Hecke algebras

August 1 (Friday):

9:45-10:45

David Vogan (MIT)

Functions on the model orbit in E_8

11:15-12:15

Roger Howe (Yale Univ.)

 K -type structure in degenerate principal series, some examples

The RIMS symposium

Analysis on Homogeneous Spaces and Representations of Lie Groups

August 4 - 8, 1997

at the Conference Hall, Yukawa Institute for Theoretical Physics,
Kyoto University

Organizer:

Nobukazu Shimeno

Scientific Committee:

M. Kashiwara, T. Kobayashi, T. Matsuki, K. Nishiyama, T. Oshima

Program

August 4 (Monday):

13:30 - 14:20 :

Masaki Kashiwara (RIMS)

Integral transform of \mathcal{D} -modules and representation theory

14:40 - 15:30 :

Kari Vilonen (Brandeis Univ.)

Geometric realization of Whittaker functions and the Langlands conjecture

15:50 - 16:40 :

Toshiyuki Tanisaki (Hiroshima Univ.)

Hypergeometric systems and Radon transforms for Hermitian symmetric spaces

August 5 (Tuesday):

10:00 - 10:50 :

Wilfried Schmid (Harvard Univ.)

Characteristic cycles of admissible representations

11:10 - 12:00 :

Takahiro Hayata (Univ. Tokyo)

Shintani-Whittaker functions on real semisimple Lie groups of low rank

13:30 - 14:20 :

David Vogan (MIT)

A Langlands classification for unitary representations

14:40 - 15:30 :

Kaoru Hiraga (Kyoto Univ.)

On the multiplicity of the discrete series representations of semisimple groups

15:50 – 16:40 :

Cheng-Bo Zhu (National Univ. of Singapore)

On the cohomology of certain non-unitary representations

August 6 (Wednesday):

10:00 – 10:50 :

Masato Wakayama (Kyushu Univ.)

Harmonic oscillators with matrix-valued symbols

11:10 – 12:00 :

Jing-Song Huang (Hong Kong Univ. of Science and Technology)

Harmonic analysis on polar homogeneous spaces

13:30 – 14:20 :

Adam Korányi (Lehman College)

Equivariant differential operators on vector bundles over G/MAN

14:40 – 15:30 :

George Tomanov (Univ. Claude Bernard Lyon I)

Group actions on homogeneous spaces and Oppenheim's conjecture for Hermitian forms over skew fields

15:50 – 16:40 :

Yves Benoist (Univ. Paris 7)

Linear groups with positive eigenvalues

August 7 (Thursday):

10:00 – 10:50 :

Minoru Wakimoto (Kyushu Univ.)

Modular transformation of twisted characters of admissible representations

11:10 – 12:00 :

Fumihiro Sato (Rikkyo Univ.)

Weakly spherical homogeneous spaces and zeta functions

13:30 – 14:20 :

Bertram Kostant (MIT)

Quantum cohomology of the flag manifold as an algebra of rational functions on a unipotent algebraic group

14:40 – 15:30 :

Toru Umeda (Kyoto Univ.)

On Capelli Identities

15:50 – 16:40 :

Tuong Ton-That (Univ. Iowa)

Poincaré-Birkhoff-Witt theorems and generalized Casimir invariants
for some infinite-dimensional Lie groups

August 8 (Friday):

10:00 – 10:50 :

Hiroyuki Ochiai (Rikkyo Univ.)

Spherical functions for an integrable system of rank two

11:10 – 12:00 :

Ivan Cherednik (Univ. North Carolina at Chapel Hill)

Harish-Chandra transform and difference operators

The RIMS workshop

August 11 - 15, 1997

at the Research Institute for Mathematical Sciences, Kyoto University

Organizer: Toshio Oshima

Program

A series of expository lectures:

Olivier Mathieu, “Modular representations of symmetric groups.”

George Tomanov, “Actions of unipotent groups on homogeneous
spaces.”

Informal lectures by

Shigeru Aoki, Suehiro Kato, David Renard, Nobukazu Shimeno,

Tuong Ton-That, Tran Vui, Tran Dao Dong, Kari Vilonen.