

The 7th International Conference  
by the Graduate School of Mathematics, Nagoya University

## Spectral Analysis in Geometry and Number Theory

on the occasion of Toshikazu Sunada's 60th birthday

6th August 2007 (Mon.) - 10th August 2007 (Fri.)

Noyori Conference Hall, Nagoya University, Nagoya, Japan

<http://www.math.nagoya-u.ac.jp/~naito/Sunada-60/>

### Program

#### 6th Aug. (Mon.)

**9:30-10:00 Registration**

**10:00-10:50** Mikhail Shubin (Northeastern University)

KdV, mKdV and eigenfunctions of Schrödinger operators

**11:00-11:50** Nobushige Kurokawa (Tokyo Institute of Technology)

Spectra of alternating Hilbert operators

#### Lunch

**13:30-14:20** Masahiko Kanai (Nagoya University)

Rigidity of the Weyl chamber flow, and the vanishing theorems of Weil and Matsushima

**14:30-15:20** Hitoshi Moriyoshi (Keio University)

Twisted index theorem and its geometric applications

#### Discussion over Tea

**15:50-16:20** Jun Masamune (Worcester Polytechnic Institute)

Conservative principle of differential forms

**16:30-17:20** Peter Buser (EPF Lausanne)

Pictures of Riemann surfaces

#### 7th Aug. (Tue.)

**10:00-10:50** Carolyn Gordon (Dartmouth College)

Sunada's isospectrality technique: Two decades later

**11:00-11:50** Junjiro Noguchi (University of Tokyo)

Value distribution and distribution of rational points

**Lunch**

**13:30-14:20** Toshiyuki Kobayashi (University of Tokyo)

On a conjecture of Sunada and theory of discretely decomposable restrictions of unitary representations

**14:30-15:20** Atsushi Katsuda (Okayama University)

An overview of Sunada's works

**15:40-16:30** Toshikazu Sunada (Meiji University)

TBA

**18:00-20:30 Party (at Rubura Ohzan)**

**8th Aug. (Wed.)**

**10:00-10:50** Laurent Saloff-Coste (Cornell University)

Property RD and random walks

**11:00-11:50** Kennichi Sugiyama (Chiba University)

A geometric analog of the Iwasawa conjecture for a hyperbolic threefold

**Lunch**

**13:30-14:20** Wolfgang Woess (Graz University of Technology)

Horocyclic products of trees and of hyperbolic spaces

**14:30-15:20** Masanori Morishita (Kyushu University)

Chern-Simons variation and Hida-Mazur theory (Joint work with Yuji Terashima)

**Discussion over Tea**

**15:50-16:10** Lindley Kent M. Faina (University of the Philippines in the Visayas)

Qualitative analysis of a three-dimensional, single-strain HIV model

**16:10-17:00** Peter Kuchment (Texas A&M University)

Liouville theorems on abelian coverings of graphs and manifolds

**9th Aug. (Thr.)**

**10:00-10:50** Jochen Brüning (Humboldt University)

Boundary value problems for Dirac operators

**11:00-11:50** Mark Pollicott (University of Warwick)

The dynamical approach to geometric zeta functions

**Lunch**

**13:30-14:20** Takehiko Morita (Hiroshima University)

Renormalized RVZ inductions

**14:30-14:50** Makoto Minamide (Nagoya University)

The zero-free region of the derivative of Selberg zeta functions

**14:50-15:10** Ivy Suan (University of the Philippines)

Non-uniform bounds in discretized normal approximation

**15:10-15:30** Mia Pang-Rey (University of the Philippines)

Poisson approximation for unbounded functions

**Discussion over Tea**

**16:00-16:50** Satoshi Ishiwata (Tsukuba University)

Random walks on nilpotent covering graphs

**10th Aug. (Fri.)**

**10:00-10:50** Zeev Rudnick (Tel Aviv University)

Nodal lines of eigenfunctions of the Laplacian on the torus

**11:00-11:30** Yoshihisa Miyanishi (The University of Air)

Some remarks on the behavior of semiclassical eigenfunctions with singular potentials

**11:40-12:30** Steve Zelditch (Johns Hopkins University)

Geodesic flow and nodal lines of eigenfunctions

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