International Conference

Algebraic Analysis of Differential Equations
— from Microlocal Analysis to Exponential Asymptotics —

in honor of Prof. Takahiro KAWAI on the occasion of his sixtieth birthday

July 7 (Thu) – July 14 (Thu), 2005
Lecture Hall (Room No. 420) of RIMS (for July 7, 8),
International Conference Hall of the Clock Tower (for July 11–14),
Kyoto University

Scientific Committee :

M. Kashiwara (RIMS, Kyoto Univ.), T. Miwa (Kyoto Univ.),
Y. Takei (RIMS, Kyoto Univ.)

Organizers :

T. Aoki (Kinki Univ.), T. Koike (Kyoto Univ.), H. Majima (Ochanomizu Univ.),
Y. Okada (Chiba Univ.), Y. Takei (RIMS, Kyoto Univ.), N. Tose (Keio Univ.)
Contact : Y. Takei (takei@kurims.kyoto-u.ac.jp)

Invited Speakers :

T. Aoki (Kinki Univ.), C. M. Bender (Washington Univ.),
L. Boutet de Monvel (Univ. de Paris VI),
O. Costin (Rutgers Univ. & Ohio State Univ.), E. Delabaere (Univ. d'Angers),
L. Ehrenpreis (Temple Univ.), C. J. Howls (Univ. of Southampton),
K. Iwasaki (Kyushu Univ.), M. Jimbo (Univ. of Tokyo),
M. Kashiwara (RIMS, Kyoto Univ.), K. Kataoka (Univ. of Tokyo),
T. Kawai (RIMS, Kyoto Univ.), Y. Laurent (Univ. de Grenoble),
G. Lebeau (Univ. de Nice-Sophia Antipolis), G. Nakamura (Hokkaido Univ.),
S. Ōuchi (Sophia Univ.), F. Pham (Univ. de Nice-Sophia Antipolis),
A. Shudo (Tokyo Metropolitan Univ.), H. J. Silverstone (Johns Hopkins Univ.),
J. Sjöstrand (Ecole Polytechnique), H. Tahara (Sophia Univ.),
Y. Takei (RIMS, Kyoto Univ.), G. Uhlmann (Univ. of Washington),
A. Voros (CEA Saclay), M. Yoshino (Hiroshima Univ.).

Program

July 7, Thursday

13:30 – 14:30   Johannes Sjöstrand (Ecole Polytechnique)
Spectral instability for non-self-adjoint operators

15:00 – 16:00   Kiyoomi Kataoka (Univ. of Tokyo)
Boundary value problems with fractional power singularities

16:30 – 17:30   Yves Laurent (Univ. de Grenoble)
Inverse image of D-modules and weighted b-functions

July 8, Friday

9:30 – 10:30   Gen Nakamura (Hokkaido Univ.)
Inverse problem for reconstructing medium singularity

10:45 – 11:45   Leon Ehrenpreis (Temple Univ.)
The edge of the wedge theorem

13:15 – 14:15   Gilles Lebeau (Univ. de Nice-Sophia Antipolis)
The hypoelliptic Laplacian of J.-M. Bismut

14:30 – 15:30   Hidetoshi Tahara (Sophia Univ.)
Coupling of two partial differential equations and its application

July 11, Monday

10:00 – 11:00   Louis Boutet de Monvel (Univ. de Paris VI)
Logarithmic trace of Szegö and Toeplitz projectors

11:30 – 12:30   Michio Jimbo (Univ. of Tokyo)
Correlation funtions in solvable lattice models: history and
recent advances

14:00 – 15:00   Masaki Kashiwara (RIMS, Kyoto Univ.)
Codimension three conjecture for holonomic modules

15:45 – 16:45   Takahiro Kawai (RIMS, Kyoto Univ.)
Virtual turning points — A gift of microlocal analysis to the
exact WKB analysis
(Joint work with T. Aoki, T. Koike, Y. Nishikawa, S. Sasaki,
A. Shudo and Y. Takei)

17:30 –   *< Party >*

July 12, Tuesday

9:30 – 10:30	Takashi Aoki (Kinki Univ.) Exact WKB analysis via computers (Joint work with N. Honda and T. Koike)
11:00 – 12:00	Gunther Uhlmann (Univ. of Washington) Boundary rigidity and the Dirichlet-to-Neumann map
13:30 – 14:30	André Voros (CEA Saclay) From exact-WKB towards singular quantum perturbation theory
15:00 – 16:00	Frédéric Pham (Univ. de Nice-Sophia Antipolis) A baby physicist's view of Feynman path integrals
16:30 – 17:30	Carl M. Bender (Washington Univ. in St. Louis) Ghost busting: Making sense of non-Hermitian Hamiltonians

July 13, Wednesday

9:30 – 10:30	Sunao Ōuchi (Sophia Univ.) The behaviors of singular solutions of some partial differential equations in the complex domain
11:00 – 12:00	Ovidiu Costin (Rutgers Univ. & Ohio State Univ.) Borel summability and rigorous WKB for partial differential equations
13:30 – 14:30	Harris J. Silverstone (Johns Hopkins Univ.) Some observations on the JKWB treatment of the quadratic barrier
15:00 – 16:00	Eric Delabaere (Univ. d'Angers) Resurgent reduction near a simple turning point
16:30 – 17:30	Akira Shudo (Tokyo Metropolitan Univ.) A role of new Stokes curves in the quantized Henon map

July 14, Thursday

9:30 – 10:30	Masafumi Yoshino (Hiroshima Univ.) WKB analysis and small denominators for vector fields
11:00 – 12:00	Christopher J. Howls (Univ. of Southampton) Recent developments in exponential asymptotics for nonlinear partial differential equations
13:30 – 14:30	Katsunori Iwasaki (Kyushu Univ.) Bounded trajectories in the sixth Painlevé dynamics
15:00 – 16:00	Yoshitsugu Takei (RIMS, Kyoto Univ.) Instanton-type formal solutions for the first Painlevé hierarchy

Schedule

	Morning		Afternoon		
July 7			J. Sjöstrand	K. Kataoka	Y. Laurent
July 8	G. Nakamura	L. Ehrenpreis	G. Lebeau	H. Tahara	
July 11	L. Boutet de Monvel	M. Jimbo	M. Kashiwara	T. Kawai	< Party >
July 12	T. Aoki	G. Uhlmann	A. Voros	F. Pham	C.M. Bender
July 13	S. Ōuchi	O. Costin	H.J. Silverstone	E. Delabaere	A. Shudo
July 14	M. Yoshino	C.J. Howls	K. Iwasaki	Y. Takei	