



Second International Conference on
Computability and Complexity in Analysis

**CCA
2005**

August 25–29, 2005, Kyoto, Japan

Program

Thursday, August 25

Satellite Seminar Lectures

- 10:00–11:30 **Peter Hertling**, *Computable Analysis via Representations*
13:00–14:30 **Takashi Kohno**, *Design of Neuromorphic Hardwares*
15:00–17:00 **Mariko Yasugi, Atsushi Yoshikawa**, *Computable Versions of Basic Theorems in Functional Analysis*

Friday, August 26

Satellite Seminar Lectures

- 10:00–11:30 **Norbert Müller**, *Implementing Exact Real Numbers Efficiently*
13:30–15:00 **Andrej Bauer**, *Realizability as Connection between Constructive and Computable Mathematics*
15:30–17:00 **Martín Escardó**, *Compactness in Topology and Computation*
18:00 Reception

Saturday, August 27

- 08:30 Arrival
09:00 Welcome: **Hiroyuki Tomita**, Dean of the Graduate School of Human and Environmental Studies
09:05 Invited Talk: **Masami Hagiya**, *Molecular Computing and Real Number Computing*
10:05 Coffee Break
10:30 **Klaus Weihrauch**, *Multi-Functions on Multi-Represented Sets are Closed under Flowchart Programming*
11:00 **Tanja Grubba, Klaus Weihrauch**, *A Computable Version of Dini's Theorem for Topological Spaces*
11:30 **Hiroyasu Kamo**, *Computability and Computable Uniqueness of Urysohn's Universal Metric Space*
12:00 Lunch Break
14:00 **Matthias Schröder, Alex Simpson**, *Representing Probability Measures using Probabilistic Processes*
14:30 **Santiago Figueira, Frank Stephan, Guohua Wu**, *Randomness and Universal Machines*
15:00 **Robert Rettinger, Xizhong Zheng**, *A Hierarchy of Turing Degrees for Divergence Bounded Computable Real Numbers*
15:30 Coffee Break
16:00 **Fuxiang Yu, Arthur Chou, Ker-I Ko**, *On the Complexity of Finding Circumscribed Rectangles for a Two-Dimensional Domain*
16:30 **Tien D. Kieu**, *Mathematical Computability Questions for some Classes of Linear and Non-Linear Differential Equations Originated from Hilbert's Tenth Problem*
18:30 Dinner

Sunday, August 28

- 09:00 Invited Talk: **Vasco Brattka**, *Some Aspects of Computable Functional Analysis*
10:00 Coffee Break
10:30 **Douglas Bridges, Luminița Viță**, *An Extension Theorem for Ultraweakly Continuous Linear Functionals on $\mathcal{B}(X, Y)$*
11:00 **Douglas Bridges, Robin Havea, Peter Schuster**, *Ideals in Constructive Banach Algebra Theory*
11:30 **Satoru Yoshida**, *Generalized Functions with Pseudobounded Support in Constructive Mathematics*
12:00 Lunch Break
14:00 **Douglas Bridges, Luminița Viță**, *Proximal Connectedness*
14:30 **Andrej Bauer, Paul Taylor**, *The Dedekind Reals in Abstract Stone Duality*
15:00 **Paul Taylor**, *A Lambda Calculus for Real Analysis*
15:30 Coffee Break
16:00 **Takakazu Mori, Yoshiki Tsujii, Mariko Yasugi**, *Fine Computable Functions and Effective Fine Convergence*
16:30 **Mariko Yasugi, Takakazu Mori, Yoshiki Tsujii**, *Effective Sequence of Uniformities and its Effective Limit*

Monday, August 29

- 09:00 Invited Talk: **Daisuke Takahashi**, *Low Temperature Limit of Equations — Hidden Discrete Structure*
10:00 Coffee Break
10:30 **Yohji Akama, Shinji Iizuka**, *Real Number Representations of Graph-Directed IFS Attractors*
11:00 **Branimir Lambov**, *RealLib: an Efficient Implementation of Exact Real Arithmetic*
11:30 Coffee Break
11:45 **Martin Ziegler**, *Effectively Open Real Functions*
12:15 **Peter Hertling**, *A Sequentially Computable Function that is not Effectively Continuous at any Point*
12:45 Closing of the Conference
17:00 Ikebana Experience at Misho-Kaikan

Venue: Graduate School of Human and Environmental Studies Building, Yoshida South Campus, Kyoto University.
Satellite Seminar Lectures on August 25–26: Seminar Room 226. Talks on August 27–29: Large Conference Room.