The Joint Conference of ASCM 2009 and MACIS 2009

Monday, December 14, 2009

9：00-10：00　Invited Speaker

Prof. Lihong Zhi, Academy of Mathematics and System Sciences, China

A Symbolic-numeric Algorithm for Computing the Multiple Roots of Polynomial Systems Accurately

10：00-10：30　Coffee Break 30 min.

10：30-12：00

ASCM-REG1

①Michael Sagraloff, Michael Kerber and Michael Hemmer

Certified Complex Root Isolation via Adaptive Root Separation Bounds

② François Boulier, Changbo Chen, François Lemaire and Marc Moreno Maza

Real Root Isolation of Regular Chains

③Katsusuke Nabeshima, Yayoi Nakamura and Shin'ichi Tajima

An Algorithm to Compute Parametric Standard Bases Using Algebraic Local Cohomology for Zero Dimensional Ideals

MACIS-CS1

①Fu-Cheng Wang, Hsiang-An Chan, Jason Zheng Jiang and Malcolm C. Smith.

Optimization and Network Synthesis for a Mechatronic System

②Takuya Kitamoto and Tetsu Yamaguchi.

On the computation of the optimal H ∞ norm of a parametric system achievable by a feedback controller

③Hiroyuki Ichihara and Hirokazu Anai.

A Sum of Squares Approach to Nonlinear Gain Analysis of a Class of
Nonlinear Dynamical Systems

14：00-15：30

ASCM-REG2

①　Yao Sun and Dingkang Wang

The Implementation and Complexity Analysis of the Branch Groebner Bases
Algorithm over Boolean Ring

②　Akira Suzuki

Computing Boolean Groebner Bases within Linear Algebra

③Shutaro Inoue and Akira Nagai

On the Implementation of Boolean Groebner Base

MACIS-CS2

①Xiaoliang LI, Chenqi Mou, Wei Niu and Dongming Wang

Stability Analysis for Discrete Biological Models Using Algebraic Methods

②Hiroshi YOSHIDA and Kinji Kimura

Algebraic approaches to underdetermined systems

16：00-17：30

ASCM-REG3

①Howard Cheng and George Labahn

A Practical Implementation of a Modular Algorithm for Ore Polynomial Matrices

②Mark Giesbrecht, George Labahn and Yang Zhang

Computing Popov Forms of Matrices over PBW Extensions

③Katsuyoshi OHARA and Shin'ichi Tajima

Spectral: Decomposition and Eigenvectors of Matrices by Residue analysis

④Sylvain Petitjean

Characterizing the Intersection Pattern of Two Conics A Bezoutian-Based Approach"

①Akira Terui

 GPGCD, an Iterative Method for Calculating Approximate GCD of Univariate
 Polynomials, with the Complex Coefficients

②Hiroshi Sekigawa

A Sequence of Nearest Polynomials with Given Factors

③Tateaki Sasaki and Daiju Inaba

Series Expansion of Multivariate Algebraic Functions at Singular Points -- Nonmonic
Case --

④Takaki Kubo

Computing Monodromy Groups defined by Plane Algebraic Curves by using Extended
Hensel Construction

Tuesday, December 15, 2009

9：00-10：00　Invited Speaker

Prof. Kokichi Sugihara, Meiji University, Japan

Computational Illusion --- Toward Escher and beyond Escher

10：00-10：30　Coffee Break 30 min.

10：30-12：00

<mark>ASCM-REG5</mark>

① Hidenao Iwane, Hitoshi Yanami and Hirokazu Anai

A Symbolic-Numeric Approach to Some Classes of Parametric Optimization Problems for Manufacturing Design

② Takuya Kitamoto and Tetsu Yamaguchi

Design of a PI controller with H ∞ performance and step response constraints

③Ming-Gong Lee and Rei-Wei Song

A Family of Block Numerical Multistage-Multistep Method

<mark>MACIS-PO1</mark>

① Antoine Colin and Marc Giusti

Efficient computation of square-free Lagrange resolvents

②Xavier Dahan

On some probabilistic aspects around modular methods

③Changbo Chen and Marc Moreno Maza

Intersection Formulas and Algorithms for Computing Triangular Decompositions

12:00-14:00　Lunch

14:00-15:00

<mark>ASCM-DIG1</mark> 60min. (invited talk)

David Ruddy,

Digitized Mathematical Literature and the Semantic Web

15：00-15：30　Coffee Break 30 min.

15：30-17：30

120min.

①John Gardner, Vladimir Bulatov, Masakazu Suzuki and Katsuhito Yamaguchi
Audio / Visual / Tactual Presentation of Scientific Graphics

②Oleg Golubitsky, Vadim Mazalov and Stephen Watt
Orientation-Independent Recognition of Handwritten Characters with Integral Invariants

③Petr Sojka
Digitisation Workflow in the Czech Digital Mathematics Library

④Walaa ALY, Seiichi UCHIDA and Masakazu SUZUKI
Extract Baseline Information Using Support Vector Machine

⑤Mihai Grigore, Magdalena Wolska and Michael Kohlhase
Towards Context-based Disambiguation of Mathematical Expressions
14:00-15:30

ASCM-VAL1
① Shin'ichi Oishi, Akitoshi Takayasu, Takayuki Kubo
Numerical Verification Method for Nonlinear Differential Equations

② Nobito Yamamoto, Ryuji Ukawa, Nozomu Matsuda
Construction of an automatic validated computation for boundary value
problems of ODEs
③ Kaori Nagatou
Computer Assisted Proofs for Spectral Problems

15：30-16：00　Coffee Break 30 min.

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16：00-17：30
<mark>ASCM-VAL2</mark>

④Xiaojun Chen, Andreas Frommer, Bruno Lang

Computational Existence Proofs for Spherical t-Designs

⑤ Daniel Wilczak

Rigorous numerics for homoclinic dynamics

⑥Takashi Hisakado, Masakazu Yagi

Error Bound for Harmonic Balance Method Using Groebner Base

18：00-19：00　Reception for Banquet
19：00-21：00　Banquet　34F　Sea Hawk Hotel

Wednesday, December 16, 2009

9：00-10：00　Invited Speaker

Dr. Markus Rosenkranz, RICAM Austrian Academy of Sciences, Austria

A New Symbolic Method for Linear Boundary Value Problems Using Groebner Bases

10：00-10：30　Coffee Break 30 min.
10：30-12：00

<mark>ASCM-CAN</mark>
① Akinari Hoshi

On the simplest quartic felds and related Thue equations

②Yoshinori Aono

Simplifcation of the lattice based attack of Boneh and Durfee for RSA cryptoanalysis

③ Seyed Mohammad Mahdi Javadi and Michael Monagan

In-place Arithmetic for Univariate Polynomials over an Algebraic Number Field

①Francisco Jesus Castro-Jiménez, Manuel Jesus Gago-Vargas, Hartillo Maria Isabel, Justo Puerto and Jose Maria Ucha

Computer Algebra for Integer Portfolio problems

②Fabrice Rouillier and Rong Xiao

On Using Triangular Decomposition for Solving Parametric Polynomial Systems

12：30-12：50　Reception for Excursion 1F
13：00-19：00　　Excursion

Thursday, December 17, 2009

9：00-10：00　Invited Speaker

Prof. Toshinori Oaku, Tokyo Woman's Christian University, Japan

Holonomic functions revisited

10：00-10：30　Coffee Break 30 min.

10：30-12：00

ASCM-REG6

①Chun Xiong, Tom Kelsey, Steve Linton and Ulf Leonhardt

Towards the calculation of Casimir forces for inhomogeneous planar media

②Barry Drake, Jingu Kim, Mahendra Mallick and Haesun Park

Raman Spectra Estimation with Classical and Nonnegative Weighted Least Squares

③Kengo Taira and Seiji Fujino

Finite Element Time Domain Method for Electromagnetic Wave Problems

MACIS-PO3

①Jin-San Cheng, Xiao-Shan Gao and Leilei Guo

Root Isolation of Zero-dimensional Polynomial Systems with Linear Univariate Representation

②William Hanan, Dagash Mehta,Guillaume Moroz and Sepanda Pouryahya

Stability and Bifurcation Analysis of Coupled Fitzhugh-Nagumo Oscillators

③Daniel Lazard

Algebraic points in geometry and application to CAD

14：00-15：30

ASCM-REG7

①Heinz Kredel

　Comprehensive Groebner Bases in a Java Computer Algebra System

②Katsusuke Nabeshima

　PGB: A package for computing parametric polynomial systems

③Tateaki Sasaki

Practical Method for Floating-point Groebner Basis Computation

MACIS-SS1

①Tudor Jebelean

Practical Aspects of Logical Based Algorithm Synthesis

②Robert van Engelen

Automatically Generating High-Performance Parallel Code for Atmospheric Simulation
Models: Challenges and Solutions for Auto-Programming Tools

③Jeremy Johnson

SPIRAL and Beyond: Automatic Derivation and Optimization of
DSP Algorithms and More

　** Short talk **

Kittisak Kerdprasop and Nittaya Kerdprasop

Automated induction of frequent patterns with knowledge-based software engineering

15：30-16：00　Coffee Break 30 min.

16：00-17：30

==ASCM-REG8==

①Masakazu Naitou, Toshiyuki Yamauchi, Taishi Inoue, Yuuki Tomari, Koichiro Nishimura, Takuma Nakaoka, Soh Tatsumi, Ryohei Miyadera, Wataru Ogasa and Daisuke Minematsu

Discrete Mathematics and Computer Algebra System

②Xavier Dahan and Jean-Pierre Tillich

Ramanujan graphs of larger girth

③Zhaocheng Xuan, Yaohui Li and Zengfa Zhou

Computation of trustworthy interval for quantities of interest in elasticity

==MACIS-SS2==

①Nittaya Kerdprasop and Kittisak Kerdprasop

A logic-based approach to the implementation of medical knowledge mining

②Gabriel Dos Reis and Bjarne Stroustrup

A Principled, Complete, and Efficient Representation of C++

③Stephen Watt

On the Future of Computer Algebra Systems at the Threshold of 2010