

International Conference on Mathematics Mechanization - In honor of Professor Wen-Tsun Wu's ninetieth birthday

**Beijing, China
May 11-13, 2009**

Registration

May 10, 2009, 14:00 -- 20:00 In the Lobby of Siyuan Building, AMSS.

May 11, 2009, 8:20 -- 16:00 In the Lobby of Siyuan Building, AMSS.

Notes for the Participants

- ICMM'09 takes place in the conference hall on the ground floor, Siyuan Building, AMSS.
- The Workshop on the History of Mathematics takes place in Room 712 on the seventh floor, Siyuan Building, AMSS, on May 11 and May 12, 2009.
- Wu's Birthday Celebration Banquet takes place in the Friendship Hotel (Building No. 1) at 18:30 -20:00, May 11, 2009. Shuttle buses are leaving for the Friendship Hotel in front of Siyuan Building at 17:50, May 11, 2009.
- Lunches and Dinners are served at Wu-Ke Hotel.
- If you stay at Jade Palace Hotel, breakfast is included in the accommodation fee. If you stay at Wu-Ke Hotel, breakfast is served at the first floor of the Wu-Ke restaurant which costs 3-5 Yuans.
- If you have any dietary requirement, please contact Dr. Ruyong Feng (ryfeng@amss.ac.cn).

Cell Phone Numbers for Emergency:

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Invited Speakers of ICMM'09:

Bruno Buchberger	Johannes Kepler University
Komatsu Hikosaburo	Tokyo University of Science
Daniel Lazard	LIP6 and INRIA Rocquencourt
Francois Boulier	Université des Sciences et Technologies de Lille
Falai Chen	University of Science and Technology of China
Yongchuan Chen	Nankai University.
Shang-Ching Chou	Wichita State University
Haibao Duan	Institute of Mathematics, CAS
Vladimir Gerdt	Joint Institute for Nuclear Research
Hoon Hong	North Carolina State University
Evelyne Hubert	INRIA Sophia Antipolis
Erich Kaltofen	North Carolina State University
Deepak Kapur	New Mexico University
George Labahn	University of Waterloo
Banghe Li	Institute of Systems Science, CAS
Hongbo Li	Institute of Systems Science, CAS
Ziming Li	Institute of Systems Science, CAS
Marc Moreno Maza	University of Western Ontario
Dongming Wang	Beihang University/CNRS
Stephen Watt	University of Western Ontario
Lu Yang	Institute of Computer Applications, CAS
Kazuhiro Yokoyama	Rikkyo University
Jingzhong Zhang	Institute of Computer Applications, CAS
Lihong Zhi	Institute of Systems Science, CAS

Organization Committee:

Shang-Ching Chou	Wichita State University
Haibao Duan	Institute of Mathematics, CAS
Xiao-Shan Gao	Institute of Systems Science, CAS, (Chair)
Sen Hu	University of Science and Technology of China
Banghe Li	Institute of Systems Science, CAS
Hongbo Li	Institute of Systems Science, CAS
Wenlin Li	Institute of Mathematics, CAS
Ziming Li	Institute of Systems Science, CAS
Dongdai Lin	Institute of Software, CAS
Zhuojun Liu	Institute of Systems Science, CAS
He Shi	Institute of Systems Science, CAS
Dingkang Wang	Institute of Systems Science, CAS
Dongming Wang	Beihang University/CNRS
Lihong Zhi	Institute of Systems Science, CAS

Sponsored by:

Academy of Mathematics and Systems Science, CAS
Chinese Association for Artificial Intelligence
Chinese Society of Computer Mathematics
Institute of Systems Science, CAS
Key Laboratory of Mathematics Mechanization, CAS
National Natural Science Foundation of China

Organized by:

Key Laboratory of Mathematics Mechanization, CAS

Program of ICMM'09

Monday, May 11

09:00 -- 09:10 Opening Remarks

09:10 -- 10:10 Chair: Wenlin Li

Speaker: Komatsu Hikosaburo

Title: Geometry of Seki Takakazu (1642 ?–1708) and Takebe Brothers with the Use of Resultants

10:10 – 11:00 Group Photo and Tea Break

Morning Session: 11:00 -- 12:20 Chair: Zhuojun Liu

11:00 -- 11:40

Speaker: Erich Kaltofen

Title: Supersparse Interpolation: Mathematics + Algorithmic and Computational Thinking = Mathematics Mechanization

11:40 – 12:20

Speaker: Lihong Zhi

Title: Determining Singular Solutions of Polynomial Systems via Symbolic-Numeric Reduction to Geometric Involutive Form

12:20 – 13:30 Lunch

Afternoon Session I: 14:00 -- 16:00 Chair: Bican Xia

14:00 -- 14:40

Speaker: Lu Yang

Title: A Dynamical Decision about the Nonnegativity of Multivariate Polynomials

14:40 -- 15:20

Speaker: Hoon Hong

Title: Deciding Feasibility of Polynomial Inequalities by Numerical Filtering

15:20 -- 16:00

Speaker: Falai Chen

Title: Recent Developments on μ -Basis of Rational Curves and Surfaces

16:00 -- 16:20 Tea Break

Afternoon Session II: 16:20 -- 17:40 Chair: Dingkang Wang

16:20 – 17:00

Speaker: Dongming Wang

Title: On the Mechanization of Geometry: From Theorem Proving to Knowledge
Management

17:00 -- 17:40

Speaker: Hongbo Li

Title: Symbolic Computational Geometry with Advanced Invariant Algebras

**17:50 Leaving for the Friendship Hotel by shuttle bus in front of the Siyuan
Building**

**18:30 -- 20:00 Wu's Birthday Celebration Banquet in the Banquet Hall of the
Building No.1, Friendship Hotel**

Tuesday, May 12

09:00 -- 10:00 Chair: Ziming Li

Speaker: Bruno Buchberger

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

10:00 -- 10:30 Tea Break

Morning Session: 10:30 -- 11:50 Chair: Zhenbing Zeng

10:30 -- 11:10

Speaker: Yongchuan Chen

Title: The Extended Zeilberger's Algorithm with Parameters

11:10 -- 11:50

Speaker: Kazuhiro Yokoyama

Title: Computation of the Splitting Field of a Polynomial Using its Galois Group

12:00 – 13:30 Lunch

Afternoon Session I: 14:00 – 16:00 Chair: Dongming Wang

14:00 -- 14:40

Speaker: Evelyne Hubert

Title: Algebra of Differential Invariants

14:40 -- 15:20

Speaker: Francois Boulrier

Title: On Applications of Differential Elimination to Modeling Problems in Biology

15:20 -- 16:00

Speaker: Vladimir P. Gerdt

Title: Involutive Groebner Bases in Boolean Rings

16:00 -- 16:40 Poster Session and Tea Break

Afternoon Session II: 16:40 -- 18:00 Chair: Min Wu

16:40-- 17:20

Speaker: Haibao Duan

Title: Homology Rigidity of Exceptional Grassmannians

17:20-- 18:00

Speaker: Shang-Ching Chou

Title: JGEX - the System Java Geometry Expert

18:00--19:30 Dinner

Wednesday, May 13

09:00 -- 10:00 Chair: Bang-He Li

Speaker: Daniel Lazard

Title: Theorem Proving in Geometry and Tools for Polynomial System Solving

10:00 -- 10:30 Tea Break

Morning Session: 10:30 -- 11:50 Chair: Hongbo Li

10:30 -- 11:10

Speaker: Bang-He Li

Title: A Method to Solve Algebraic Equations up to Multiplicities via Ritt-Wu's Characteristic Sets

11:10 -- 11:50

Speaker: Marc Moreno Maza

Title: Triangular Decomposition of Polynomial Systems: Algorithmic Advances and Remaining Challenges

12:00 – 13:30 Lunch

Afternoon Session I: 14:00 – 16:00 Chair: Dongdai Lin

14:00 -- 14:40

Speaker: Jingzhong Zhang

Title: Mathematics Mechanization and Education Technology

14:40 -- 15:20

Speaker: Stephen Watt

Title: The Mathematics of Calligraphy

15:20 -- 16:00

Speaker: George Labahn

Title: Solving Structured Linear Problems in Exact and Approximate Arithmetic

16:00 -- 16:40 Poster Session and Tea Break

Afternoon Session II: 16:40 -- 18:00 Chair: Lihong Zhi

16:40 -- 17:20

Speaker: Deepak Kapur

Title: On Wu's Perspective on Theorem Proving with a Recent Application to Program Analysis

17:20 -- 18:00

Speaker: Ziming Li

Title: Submersive Rational Difference Systems and Their Accessibility.

18:00--18:10 Closing Remarks

18:15--19:30 Dinner

Program of the Workshop on the History of Mathematics

Monday, May 11

Morning Session: 11:00 -- 12:00 Chair: Wenlin Li

11: 00-- 11:30

Speaker: Joseph Cheng-Yih Chen

Title: Derivation and Proof: The Similarity and Differences between Chinese and Western Thoughts

11:30 – 12:00

Speaker: Zuoxuan Hu

Title: TBA

12:00 – 13:30 Lunch

Afternoon Session I: 14:00 -- 16:00 Chair: Anjing Qu

14:00 -- 14:30

Speaker: Shuchun Guo

Title: Review on Mr Wu's Edification on Imaging Problem of Ancient Mathematicians from Modern Painting Artists

14:30 -- 15:00

Speaker: Shaogeng He

Title: Mystery of *Book of Arithmetic*(*Suan Shu Shu*)

15:00 -- 15:30

Speaker: Jianjin Luo

Title: Wu's Guidance on the Development of Abacus Cause

15:30 -- 16:00

Speaker: Kang Xu

Title: On Wu's Status on the History of Chinese Mathematics Science

16:00 -- 16:20 Tea Break

Afternoon Session II: 16:20 -- 17:40 Chair: Mingli Deng

16:20 -- 16:50

Speaker: Zhigang Ji

Title: Investigation of the Communication and the Exchange of Mathematical Knowledge between East and West from *<Book of Computation>*

16:50 -- 17:20

Speaker: Amir & Yilmam Yusup

Title: Arabian Mathematician Al-kashi's Method of Opening Any High-Power and Chinese Mathematician Jia Xian's "THE EXTRACTION OF ZENGCHENG"

17:20 – 17:40

Speaker: Dianzhou Zhang

Title: Research on Wu Wenjun's Mathematical Education Thought

17:50 Leaving for the Friendship Hotel by shuttle bus in front of the Siyuan Building

18:30 -- 20:00 Wu's Birthday Celebration Banquet in the Banquet Hall of the Building No.1, Friendship Hotel

Tuesday, May 12

Morning Session I: 09:00 -- 10:00 Chair: Shirong Guo

09:00 -- 09:30

Speaker: Zhonglai Li

Title: Discussion from the Cooperation between Professors Bai Shangshu and Wu Wenjun

09:30 -- 10:00

Speaker: Yunhong Xiao

Title: The Introduction of Western Knowledge on Specific Density

10:00 -- 10:20 Tea Break

Morning Session II : 10:20 -- 11:50 Chair: Dahai Zou

10:20 -- 10:50

Speaker: Shirong Guo

Title: The Guidance of Wu on the Work of Mathematics History in Chinese Universities

10:50 -- 11:20

Speaker: Mingli Deng

Title: Wu Wenjun and the Scientific Rewards Received by Him

11:20 -- 11:50

Speaker: Lisheng Feng

Title: On the Historiography Problems of History of Chinese Mathematics

12:00 – 13:30 Lunch

Afternoon Session I: 14:00 – 16:00 Chair: Lisheng Feng

14:00 -- 14:30

Speaker: Hongguang Zhang

Title: Wu Wenjun·Chen Xingshen·Selected Works--Review and Commentary from the
Historical Perspective of China's Endeavour into Mathematical Major Powers

14:30 -- 15:00

Speaker: Guoping Kong

Title: My Good Mentor and Helpful Friend--Wu Wenjun

15:00 -- 15:30

Speaker: Dahai Zou

Title: Study the Geometric Knowledge of the Pre-Qin Period From "Mo Zi"

15:30 -- 16:00

Speaker: Zelin Xu

Title: Study of the Incisive Expositions of Wu on Chinese Traditional Mathematics
from the Aspect of Wasan

Afternoon Session II: 16:00 -- 16:30 Chair: Zelin Xu

16:00 -- 16:30

Speaker: Pinfang Xu

Title:TBA

16:30 -- 17:00 Closing Remarks