



**ICHM Co-Sponsored  
International Conference on the History of Modern Mathematics**

**Xi'an, China, August 11-17, 2010**

*Anjing Qu & Karine Chemla*

The *International Conference on the History of Modern Mathematics 1800—1930* was held in Xi'an, China from August 11 (Wednesday) till 17 (Tuesday), 2010.

The conference was organized by Northwest University in Xi'an and Chinese Society for the History of Mathematics, in association with the research group REHSEIS-SPHERE, affiliated with CNRS & University Paris Diderot. There were 87 participants from France (8 persons), USA (5), UK (3), Japan (3), Germany (2), Canada (1), Norway (1), Denmark (1), Israel (1) and China (62). There were 17 PhD students and 13 graduate students among them.

The general theme chosen by the conference was:

***Cultures and elements of practices in mathematics, 1800-1930.***

The topic of “mathematical practice” or of “professional cultures in mathematics” is one that has become quite active in contemporary research and arouses interest from historians as well as philosophers of mathematics. During the conference, the issues of “practice” and “professional cultures” for history of mathematics between 1800 and 1930 was discussed from many aspects. There were 46 talks offering a wide range of ideas to understand mathematics during 19th century.

Here is the list of talks in chronological order:

**Session: Working with Problems**

1. **Bruno Belhoste** (*University Paris Panthéon-Sorbonne, Paris, France*)

**Title:** Working with Spheres in 3-dimensional Space: the Culture of Problems at Paris Polytechnic School around 1800

2. **Renaud Chorlay** (*REHSEIS, SPHERE, CNRS & University Paris Diderot, France*)

**Title:** On the Use of Problems: The case of the Cousin Problems (1883 - 1940)

**Session: Algebraic & Analytical Practices — I**

3. **Zhao Jiwei 赵继伟** (*Department of Mathematics, Northwest University, Xian, China*)

**Title:** Cardano's Special Rules of the Cubic Equations



4. **Guo Shirong** 郭世荣 (*Institute for the History of Science and Technology, Inner Mongolia Normal University, Huhhot, China*)

**Title:** The Convergent Problems of Infinite Series in Chinese Mathematics in the 18-19th Centuries

5. **Wang Xianfen** 王献芬 (*PhD student, School of Mathematics and Information Science, Hebei Normal University, Shijiazhuang, China*)

**Title:** W.T.Tutte and the Renewing of Matroid Theory

**Session:** Actors' Reflections on Mathematical Practice

6. **Mitsuo Morimoto** 森本光生 (*International Christian University, Tokyo, JAPAN*)

**Title:** Mathematical Philosophy of Takebe Katahiro

7. **Karine Chemla** (*REHSEIS—SPHERE, CNRS & University Paris Diderot, Paris, France*)

**Title:** Simplicity as a Key Epistemological Value in the Development of Projective Geometry in France (First Half of 19th Century)

8. **Norbert Schappacher** (*UNIVERSITE DE STRASBOURG, France*)

**Title:** Remarks on the Opposition "Concrete" vs. "Abstract" in 19th and 20th Century Mathematics

9. **Jeremy Gray** (*Open University, London, UK*)

**Title:** Henri Poincaré's Reflections on Mathematical and Scientific Practice

10. **Thomas Archibald** (*Simon Fraser University, Vancouver, Canada*)

**Title :** Poincaré, Stability Theory, and Saturn's Rings

11. **Martina Schneider** (*Sächsische Akademie der Wissenschaften zu Leipzig, Geschichte der Naturwissenschaften und Mathematik, Leipzig, Germany*)

**Title:** Between Two Disciplines: Van der Waerden and the Development of Quantum Mechanics

12. **Tinne Hoff Kjeldsen** (*Roskilde University, Copenhagen, Denmark*)

**Title:** Two Different Strands of Thought in the Emergence of the Concept of a Convex body: Epistemic Objects and Techniques

**Session:** Algebraic & Analytical Practices — II

13. **Karen Parshall** (*University of Virginia, Charlottesville, USA*)

**Title:** Algebraic Practice in Victorian Britain



14. **Kenji Ueno** 上野健爾 (*Seki Kowa Institute of Mathematics, Yokkaichi University, Kyoto, Japan*)

**Title :** Theory of Algebraic Functions in 19th and 20th Centuries

15. **Jessica Grund Carter** (*Department of Mathematics and Computer Science, University of Southern Denmark, Denmark*)

**Title:** Introduction of Objects: Context and Representations

16. **Ao te gen** 敖特根 (*PhD student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** Linear Programming from Von Neumann to G. B. Dantzig

17. **Zhao Bin** 赵斌 (*PhD student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** Origin and Formation of Biomathematics

18. **Mou Jinbao** 牟金保 (*Graduate student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** The Unification of Non-Euclidean Geometries

19. **Liu Yaya** 刘娅娅 (*Graduate student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** The Combination of Mathematics and Music—the Comparison of the Origination of the Calculation of Temperament between Ancient China and Greece

20. **Colin McLarty** (*Case Western Reserve University, USA*)

**Title:** Emmy Noether's First Great Mathematics, and the Culmination of First-phase Logicism, Formalism and Intuitionism

21. **Yan Chenguang** 阎晨光 (*PhD student, School of Mathematics and Information Science, Hebei Normal University, Shijiazhuang, China*)

**Title :** The Analysis of Chevalley's Work in the Class Field Theory

**Session:** Revisiting the History of Galois Theory

22. **Zhao Zengxun** 赵增逊 (*Graduate student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** From the Roots Formula to the Resolvent



23. **Wang Xiaoyu** 王宵瑜 (*Graduate student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** Gauss's Contribution for Solving Algebraic Equations

24. **Wang Xiaofei** 王晓斐 (*Graduate student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** The Evolvement of the Thoughts in Abel's Proof

25. **Yang Xian** 杨显 (*Graduate student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** Galois's Strategy

26. **Wang Chang** 王昌 (*PhD student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** Artin's Work on Galois Theory

**Session:** Practices of Computation

27. **Leo Corry** (*Cohn Institute for History and Philosophy of Science, Tel Aviv, Israel*)

**Title:** Theory and Computations in Number Theory in the USA before 1935: A Tale Of Provincial Life

28. **Don Zagier** (*Max Planck Institute for Mathematics, Bonn, Germany; Collège de France, Paris, France*)

**Title:** Mathematics by Thought and by Hand, Today and in the Past

**Session:** The Making of Professional Cultures

29. **Deborah Kent** (*Department of Mathematics, Hillsdale, USA*)

**Title:** The American Journal of Mathematics: Culture and Practice

30. **Chen Kesheng** 陈克胜 (*PhD student, Institute for the History of Science and Technology, Inner Mongolia Normal University, Huhhot, China*)

**Title :** Suan Biao He Bi: the First Textbook of Science Table in China

31. **Marion Cousin** (*PhD student, Laboratoire d'Etude du phenomene scientifique – Mathematics Department, University Lyon I, France*)

**Title:** Mathematics Teachers at the Beginning of Meiji Era—Introduction to a Study of the Transfers of Knowledge Occurring during the Second Part of the 19th Century Influences on Teaching and General Practices in Geometry



32. **Tian Miao** 田淼 (*Institute for the History of Natural Science, Chinese Academy of Sciences, Beijing, China*)

**Title:** The Professionalization of Chinese Mathematicians during 1850-1904

33. **Joseph Dauben** (*Research Center for Humanities and School Sciences, National Chiao-Tung University, Hsinchu City, Taiwan*)

**Title:** China and India : How Each Fashioned a Distinctive Professional Culture of Modern Mathematics

34. **Reinhard Siegmund-Schultze** (*University of Agder, College in Kristiansand, Norway*)

**Title :** The Rise of Applied Mathematics in Germany between 1890 and 1930 and Changes in the Profession of the Mathematician

**Session: Mathematical Practice in War Times**

35. **June Barrow-Green** (*Open University, London, UK*)

**Title:** The First World War as a Source of British Mathematical Practice

36. **David Aubin** (*University Pierre et Marie Curie, Paris*)

**Title:** Mathematical Practice and Professional Cultures in WWI: The Case of French Ballistics

**Short Presentations**

37. **Li Changqing** 李长青 (*Graduate student, Department of Physics, Capital Normal University, Beijing, China*)

**Title :** Kant Influenced on Hamilton

38. **Xu Meizhen** 许美珍 (*PhD student, School of Science, Inner Mongolia University of Technology, Huhhot, China*)

**Title :** Development of the Theory of Self-Adjoint Domains of Ordinary Differential Operators

39. **YU Fengyuan** 于丰园 (*Education Department of Huangshan University, Huangshan City, Anhui, China*)

**Title :** Husserl's Thought on Origins of Mathematical

**Session: Mathematical Practice with Data**

40. **Theodore Porter** (*Department of history, University of California, Los Angeles, (UCLA), USA*)

**Title :** Mathematics and the Data-Driven Science



41. **Andrea Bréard** (*Université Lille 1 Sciences et Technologies, U.F.R. de Mathématiques, Laboratoire Paul Painlevé U.M.R. CNRS 8524, 59655 Villeneuve d'Ascq Cedex, France*)

**Title :** The First Generation of "Statisticians" in Early 20th Century China: a Multicultural Issue

42. **Zhao Chenyang 赵晨阳** (*PhD student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** Behrens-Fisher Problem and the Contribution of Pao-Lu Hsu

43. **Marie-José Durand-Richard** (*REHSEIS-SPHERE, CNRS & U. Paris 7, Paris, France*)

**Title:** Mechanization of Tide Tables between Great-Britain and France in the 2d part of the 19th century

44. **Nie Shuyuan 聂淑媛** (*PhD student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** The Historical Research about Yule's First Establishing Regression Analysis Method in Time Series

**Session:** Cultures of Logic

45. **Tsukane Ogawa 小川東** (*Department of Environmental and Information Sciences, Yokkaichi University, Japan*)

**Title:** Methods and Logic in Traditional Japanese Mathematics

46. **Zhou Chang 周畅** (*PhD student, Department of Mathematics, Northwest University, Xian, China*)

**Title:** On the Masterpiece of Inductive Reasoning in East Asia: *Tetsujutsu Sankei*.

In addition to the talks, the scientific committee of the conference organized two round tables. The first round table focused on "the notions of mathematical practices and cultures". The topic of the second round table was: "research on the history of modern mathematics in East Asia". The discussions about "mathematical practice" and "professional cultures in mathematics" during the time period between 1800 and 1930 could help participants to better understand how these concepts can be refined if we are to use them to approach the history of mathematics during 1800-1930. Many interesting questions were raised during these discussions, which could benefit all the young students who want to do research on the history of mathematics, and on the history of modern mathematics in particular.

During the conference, in order to create more opportunities for younger scholars to discuss and exchange with mathematicians, historians of mathematics and philosophers of mathematics, the conference organizers arranged several group activities. The tour of Xi'an city wall after the rain gave all the participants deep impression. The city wall survived through a long history, and is the most complete city wall in China now. Participants had a good chance to relax after whole hard days' lectures.



# ICHM



The conference was sponsored by the National Natural Science Foundation of China, International Commission for the History of Mathematics, Centre National de la Recherche Scientifique IASCUD Commission of the DHST, and Northwest University in Xi'an. The hotel provided us spacious and bright conference room, comfortable accommodations, delicious food and satisfactory service for the participants. Without these generous contributions, it would not have been possible to organize the conference.

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