

ESU7-Programme Copenhagen 2014

Monday 14 of July

8:00-9:00: Registration

9:00 – 9:10: Welcome to ESU-7 in Copenhagen 2014.

By Uffe Thomas Jankvist, Tinne Hoff Kjeldsen and Evelyne Barbin

9:10 – 10:10: Plenary in the Ceremonial Hall A220: **Theme 2&3**; *History in the classroom: educational opportunities and open questions.*

Speaker: Adriano Demattè, University of Genoa (Italy)

Chair: Kathleen Clark, Florida State University (USA)

10:10 – 10:30: Break with coffee, tea, water and small croissants in the area outside A220.

10:30 – 12:30: Workshops 2 hours: **Theme 3** in six parallel sessions

1. Mustafa Alpaslan (Turkey) **Room A210**: *Selecting and Preparing Original Sources for Pre-Service Mathematics Teacher Education: The Preliminary Report of a Dissertation.*
2. Adriano Demattè (Italy) **Room A212**: *Yes, I do use history of mathematics in my class because...*
3. Kristian Danielsen and Henrik Kragh Sørensen (Denmark) **A214**: *Using authentic sources in teaching logistic growth: A narrative design perspective.*
4. Frank Swetz (USA) **Room A130**: *Pantas' Cabinet of Mathematical Wonders: Collecting Materials for Convergence.*
5. Bjarne Toft (Denmark) **Room A104**: *Games of Piet Hein & Tribute to Martin Gardner.*
6. Bjørn Smestad (Norway) **room A303**: *What should a mathematics teacher know?*

12:30 – 13:30: Lunch in the AULA area

13:30 – 16:30: Workshops 3 hours: **Theme 3** in five parallel sessions

1. Janet Heine Barnett (USA) **Room A303**: *Abstract Awakenings in Algebra: A Guided Reading Approach to Teaching Modern Algebra Via Original Sources.*
2. Anne Boyé, Annie Michel-Pajus and Martine Bühler (France) **Room A210**: *Algorithmes: l'apport des textes historiques en classe. Algorithms: an approach based on historical texts in the classroom.*
3. Renaud Chorlay (France) **Room A212**: *Making sense of the derivative, by combining historical sources and ICT.*
4. Cecile de Hosson (France) **Room A214**: *Using historical texts in an interdisciplinary perspective: two examples of the interrelation between mathematics and natural sciences.*
5. Susanne Spies, Gregor Nickel and Henrike Allmendinger (Germany) **Room A130**: *Using*

original sources in teachers education – An analysis on possible effects and experiences.

16:30 – 17:30: Oral presentation: **Theme 2 & 3** in four parallel sessions, 2 per session

Room A210 Chair: Bjørn Smestad

1. Panagiotis Delikanlis (Greece): *Meno by Plato : an ancient inexhaustible mine of knowledge.*
2. Fanglin Tian (China): *Integrating the History into the Teaching of the Concept of Logarithms.*

Room A212 Chair: Ingo Witzke

1. Morten Misfeldt, Kristian Danielsen and Henrik Kragh Sørensen (Denmark): *Cognitive conflicts and exploratory experimentation: How can the continuous overlap between empirical and deductive proof schemes be conceptualized?*
2. Hong Yanjun (China): *Teaching the Area of a Circle from the Perspective of HPM.*

Room A214 Chair: Frederic Metin

1. Zou Jiachen (China): *The Genetic Approach to Teaching the Ellipse.*
2. Michel Kourkoulos and Constantinos Tzanakis (Greece): *Statistics and free will.*

Room A130 Chair: Uffe Thomas Jankvist

1. Maria Zoraide Martins Costa Soares, Rosa Maria Machado and Otília Terezinha Wiermann Paques (and Douglas Daniel) (Brazil): *Solving some Lamé's problems using geometric software.*
2. Mario Sánchez Aguilar and Juan Gabriel Molina Zavaleta (Mexico): *A didactic proposal for using the difference between two quantities to analyze the relationships between some magnitudes of the circle.*

17:30 – 18:00: Poster presentations in four parallel sessions, 2 per session

Room A210 Chair: Andrea V. Rohrer

1. Davidson Paulo Azevedo Oliveira (and Milton Rosa and Marger da Conceição Ventura Viana) (Brazil): *The Contributions of Funds of Knowledge and Culturally Relevant Pedagogy as methodologies for the Development of Sociocultural Perspective of History of Mathematics in Mathematics Classrooms*
2. Julio Corrêa (Brazil/Denmark): *Mathematics, education and war.*

Room A212 Chair: Susanne Spies

1. Michela Maschietto (Italy): *From history to primary classrooms with B. Pascal: approaching place value and arithmetical operations with pascaline and e-pascaline.*
2. Miglena Asenova (and Giorgio Bolondi) (Italy): *A hermeneutic approach to history and epistemology in mathematics education: the case of probability.*

Room A214 Chair: Mária Almeida

1. Leticia del Rocío Pardo-Mota and Alejandro Rosas-Mendoza (Mexico): *Math for Special Education.*

- Leticia del Rocío Pardo-Mota and Alejandro Rosas-Mendoza (Mexico): *Progressions and series in ancient China*.

Room A104 Chair: Mustafa Alpaslan

- Zhu Lin (China): *Genetic approach to teaching derivative*
- Laurence Kirby (USA): *Plimpton 322: A video documentary to motivate students to study mathematics*

18:00 – 19:00: Wine reception with poster gallery in the AULA area.

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Tuesday 15 of July

9:00 – 10:00: Plenary in the Ceremonial Hall A220: **Theme 1**; *The Implicit and Explicit Epistemologies of Mathematics in History and Education: thirty years after Hans Freudenthal*.

Speaker: Evelyne Barbin, University of Nantes (France)

Chair: Jan Van Maanen, Utrecht University (Netherlands)

10:00 – 10:30: Break with coffee, tea, water and small croissants in the area outside A220.

10:30 – 12:30: Workshops 2 hours: **Theme 2** in six parallel sessions

- Ghislaine Idabouk (France) **room A303**: *Mathematics, algorithmics and history: an integrated approach in two classroom experiments*.

2. Nitsa Movshovitz-Hadar and Batyia Amit (Israel) **room A210**: *Opening the door to in-service teachers for interweaving "tomorrow's history" in the teaching of high-school mathematics.*
3. Michel Roelens (and Wilfred de Graaf) (Belgium) **room A212**: *Workshop on the Use and the Mathematics of the Astrolabe.*
4. Jan Van Maanen (Netherland) **room A214**: *'Telling mathematics' revisited.*
5. Caterina Vicentini (Italy) **room A104**: *Playing with Euler.*
6. Robin Wilson (UK) **room A130**: *Two Introductory University Courses on the History of Mathematics.*

12:30 – 13:30: Lunch in the AULA area

13:30 – 16:30: Workshops 3 hours: **Theme 1 & 7** in five parallel sessions

1. Evelyne Barbin (France) **room A303**: *Curves in history and in teaching of mathematics: problems, meanings, classifications.*
2. Mikkel Willum Johansen and Tinne Hoff Kjeldsen (Denmark) **room A210**: *Mathematics as a tool-driven practice: Workshop on the use of material and conceptual artifacts in mathematics.*
3. Francois Plantade (France) **room A212**: *Jules Houël (1823-86): a French mathematician well connected to the Nordic mathematicians in the second part of the XIXth century.*
4. Leo Rogers (UK) **room A214**: *Tools and Procedures for Using Historical Materials in the Classroom.*
5. Desirée Kröger and Sara Confalonieri (Germany) **room A130**: *Learning mathematics from German and French textbooks in the 18th century - the case study of negative numbers.*

16:30 – 18:00: Oral presentation: **Theme 1** in 6 parallel sessions, 3 per session

Room A303 Chair: Henrik Kragh Sørensen

1. Michael N. Fried (Israel) and Hans Niels Jahnke (Germany): *Toeplitz's 1926 Paper on the Genetic Method: Meaning and Context.*
2. Ladislav Kvasz (Czech Republic): *Degrees of inconsistency.*
3. Alain Bernard (France) and Katalin Gosztonyi (Hungary): *Series of problems: a genre at the crossroad of various traditions and the possible point of departure of teachers' reflections*

Room A210 Chair: Renaud Chorlay

1. David Guillemette (Canada): *Sociocultural approaches in mathematics education for the investigation of the potential of history of mathematics with pre-service secondary school teachers.*
2. René Guitart (France): *History in Mathematics According to André Weil.*
3. Leo Rogers (UK): *Historical Epistemology: Contexts for contemplating classroom activities.*

Room A212 Chair: Thomas Morel

1. Aline Bernardes & Tatiana Roque (Brazil): *Reflecting on meta-discursive rules through*

episodes from History of Matrices.

2. Ke Wang (China): *A New Paradigm in the Field of HPM - Design Research.*
3. Karel Zavřel (Czech Republic): *Parallels between phylogeny and ontogeny of logic.*

Room A214 Chair: Mario Sánchez Aguilar

1. Katrin Reimann (Germany): *On the understanding of the concept of number in Euler's algebra.*
2. Gabriela Buendía Abalos (Mexico): *The necessity of developing epistemologies of practices and uses so they can conform a significances basis for any kind of didactical proposal.*
3. Lin Jiale (China): *A Theoretical Framework of HPM.*

Room A104 Chair: Morten Misfeldt

1. Ingo Witzke (Germany): *On preservice teachers' understanding of mathematics.*
2. Arto Mutanen (Finland): *Knowledge acquisition and mathematical reasoning.*
3. Wang Xiaoqin (China): *HPM in Mainland China: an Overview.*

Room A130 Chair: Luis Puig

1. Klaus Volkert (Germany): *The problem of the parallels at the 18th century: Kästner, Klügel and other people.*
2. Thomas Hausberger (France): *Training students in mathematics education to use history and epistemological tools: theory and practice on the basis of experiments conducted at Montpellier University (France).*
3. Cecilia Costa (and José Miguel Alves and Marta Guerra) (Portugal): *The ancestral Chinese method for solving linear systems of equations seen by a ten years old Portuguese boy.*

18:00 – 19:00 Happy Hour

Wednesday 16 of July

9:00 – 10:00: Plenary: **Theme 4**; *Promoting an interdisciplinary teaching through the use of elements of Greek and Chinese early cosmologies.*

Speaker: Cécile de Hosson, University Paris 7 (France).

Chair: Renaud Chorlay, University Paris Sorbonne (France).

10:00 – 10:30: Break with coffee, tea, water and small croissants in the area outside A220.

10:30 – 12:00: **Panel 1**: *Computational Technology: Historical and philosophical approaches to technics and technology in mathematics and mathematics education*

Mario Sánchez Aguilar, National Polytechnic Institute of Mexico.

Mikkel Willum Johansen, Assistant professor in the philosophy of the mathematical sciences at the Department of Science Education, University of Copenhagen.

Mirko Maracci:

Assistant Professor in Mathematics Education at the Department of Mathematics of the University of Pavia, Italy.

Morten Misfeldt :

Associate professor and research manager of the research lab for ICT and design for learning, Aalborg University in Copenhagen.

Per Jönsson:

Works in mathematics with a special interest in numerical analysis and the use of computers for mathematical research.

12:00 – Lunch, Excursion and conference dinner

Thursday 17 of July

9:00 – 10:00: Plenary: **Theme 5**; *Calendars and currency – Embedded in culture, nature, society and language.*

Speaker: Kristin Bjarnadottir, University of Iceland (Iceland).

Chair: Man Keung Siu, University of Hong Kong (China).

10:00 – 10:15: Break with coffee, tea, water and small croissants in the area outside A220.

10:15 – 11:15: Plenary: **Theme 6**; *New approaches and results in the history of teaching and learning mathematics.*

Speaker: Gert Schubring, University of Bielfeld (RFA) and UFRJ (Brasil)

Chair: Snezana Lawrence, Bath Spa University (UK).

11:15 – 11:45: Break

11.45 – 13:15: **Panel 2** - Discussion about: *The question of evaluation and assessment of experiences with introducing history of mathematics in the classroom.*

Leo Rogers, Department of Education, University of Oxford. (UK)

Janet Heine Barnett, Department of Mathematics and Physics Colorado State University, Pueblo. (USA)

Ysette Weiss-Pidstrygach, Institut fuer Mathematik AG Fachdidaktik Mathematik, University of Mainz. (DE)

David Guillemette, Université du Québec à Montréal (UQAM) (CA)

Frederic Metin, École Supérieure du Professorat et de l'Éducation, Université de Bourgogne, Dijon. (FR)

13:15 – 14:30: Lunch in the AULA area

14:30 – 17:30: Workshops 3 hours: **Theme 1, 4 & 6** in six parallel sessions

1. Xavier Lefort (France) **room A210**: *Some stages of the location in open sea.*
2. Carole Nahum (France) **room A212**: *A Strong Collaboration between Physicians and Mathematicians through the XIXth Century: Double Refraction Theory.*
3. Thomas Preveraud (France) **room 214**: *Geometry, Teaching and Institutions in 19th Century United States. A Study of Legendre's Geometry Translations Corpus.*
4. Gert Schubring (Germany) **room A130**: *Workshop on new approaches and results of research into the history of mathematics education.*
5. Caroline Kuhn and Snezana Lawrence (UK) **room A104**: *Personalised Learning*

Environment and the History of Mathematics in the Learning of Mathematics.

6. Frédéric Metin and Patrick Guyot (France) **room A220**: *What can we learn from Jacques Rohault's lessons in mathematics and physics?*

17:40– 18:40: Oral presentation: **Theme 4, 5, 6 & 7** in six parallel sessions, 2 per session

Room A303 (themes 5) Chair: Michael N. Fried

1. James F. Kiernan (USA): *A Course to Address the Issue of Diversity.*
2. Andrea V. Rohrer (Brazil): *The Teuto-Brazilians of Friburgo – mathematics textbooks and the use of (non-metric) measure systems.*

Room A212 (theme 6) Chair: Anna Michel-Pajus

1. Jérôme Auvinet (France): *Around a book dedicated to childhood friends: L'Initiation mathématique of C.-A. Laisant.*
2. Thomas Morel (Germany): *Teaching mathematics in mining academies: an overview at the end of the 18th century.*

Room A214 (theme 6) Chair: Janet Hiene Barnett

1. Luis Puig (Spain): *The beginning of algebra in Spanish in the sixteenth Century: Marco Aurel's Arithmetica Algebratica.*
2. Dirk De Bock and Geert Vanpaemel (Belgium): *The Belgian journal Mathematica & Paedagogia (1953-1974): A forum for the national and international scene in mathematics education.*

Room A100a (theme 6) Chair: Tanja Hamann

1. Karel Lepka (Czech Republic): *T. G. Masaryk and mathematics.*
2. Mária Cristina de Almeida (Portugal): *Mathematics textbooks, in Portugal: the case of the first unique mandatory Algebra textbook (1950).*

Room A104 (theme 7) Chair: David Guillemette

1. Kajsa Bråting (Sweden): *E.G Björling's view of fundamental concepts in mathematical analysis in an epistemological and didactical perspective.*
2. Harald Gropp (Germany): *Thomas Clausen (1801 - 1885) or how to become a professor of astronomy.*

Room A130 (theme 6) Chair: Constantinos Tzanakis

1. Karasawa Toshimitsu(Japan): *Specialization and generalization of the mathematical concept by Mr. Inatsugi Seiichi in Japan.*
2. Hervé Renaud (France): *When modern mathematics questioned the pedagogical methods in secondary education (1905-1910).*

18:40 – 19:40: Happy Hour

Friday 18 of July

9:00 – 10:00: Plenary: **Theme 7**; *Julius Petersen and James Joseph Sylvester - the emergence of graph theory.*

Speaker: Bjarne Toft, University of Southern Denmark (Denmark).

Chair: Tinne Hoff Kjeldsen, Copenhagen University (Denmark).

10:00 – 10:30: Break with coffee, tea, water and small croissants in the area outside A220.

10:30 – 12:30: Workshops 2 hours: **Theme 1 & 6** in six parallel sessions

1. Kathleen Clark and Emmet Harrington (USA) **room A303**: *Deciphering Mathematical Doodles of the "Shoebbox Collection" of the Paul A.M. Dirac Papers.*
2. Gérard Grimberg (Brazil) **room A210**: *Reflections about changing the teaching of geometry in graduation.*
3. Tanja Hamann (Germany) **room A212**: *New Math - a complete failure?*
4. Helder Pinto (Portugal) **room A214**: *Mathematical lessons in a newspaper of Porto in 1853 (primary education).*
5. Fatima Romero Vallhonestá, Maria Rosa Massa, Iolanda Guevara, Carles Puig-Pla, Antoni Roca-Rosell **room A104**: *Teacher Training in History of Mathematics*
6. Michela Maschietto (Italy) **Room A130**: *Approaching conic sections with mathematical machines at secondary school.*

12:30 – 13:30: Lunch in the AULA area

13:30 – 15:30: Workshops 2 hours: **Theme 4 & 5** in five parallel sessions

1. Man Keung Siu (China) **room A303**: *A geometric problem on three circles in a triangle (the Malfatti Problem) - A thread through Japanese, European and Chinese mathematics.*
2. Ysette Weiss-Pidstrygach (Germany) **room A210**: *Historical Mathematical Models in Teacher Education - workshop based on didactical pedagogical material.*
3. Kristin Bjarndottir (Iceland) **room A214**: *The Solar Cycle and Calendars, Currency and Numbers - Relations to Society and Culture.*
4. Jean Michel Delire (Belgium) **room A104**: *Activités mathématiques dans des classes à l'occasion d'une exposition « Art et Savoir de l'Inde » présentée dans le cadre du festival Europolia-India (Bruxelles, octobre 2013 – janvier 2014).*
5. Harm Jan Smid (Netherlands) **room A130**: *A Mathematical Walk in "Museum Boerhaave".*

15:45 – 16:45: Closure