

■ Table of Contents

Invited Talks

What can technology add to the mathematics classroom?	1
Douglas Butler	
Getting mathematical concepts and learning proofs by computer aided linear algebra	1
Wolfgang Fraunholz	
Algovision or how to animate algorithms	2
Luděk Kučera	
Teaching and Learning Algebra based on Neuroscience/Cognitive Science Research	2
Edward D. Laughbaum	
Creative and Dynamic Contents Evolve When Technological Tools Advance	2
Wei-Chi Yang	

Papers

Importance of semiotic representations: how CAS can help	3
Giovannina Albano, Matteo Desiderio	
The Appropriation of Information and Communication Technology by Pre-Service Teachers of Mathematics and Oral Learning	3
Michel Beaudoin	
Towards an integrated learning environment for mathematics	4
Christian Bokhove, Gerard Koolstra, Peter Boon, André Heck	
Adding New Representations of Mathematical Objects to Aplusix	4
Denis Bouhineau, Hamid Chaachoua, Jean-Francois Nicaud, Christophe Viudez	
Helping Teachers Generate Exercises with Random Coefficients	5
Denis Bouhineau, Hamid Chaachoua, Camille Douine, Jean-Francois Nicaud	
Using Technology to Improve Mathematics Methods Courses	5
Sue Brown	
Example of integration of the ICT in primary school teachers' training	5
Richard Cabassut, Marc Trestini	
Developing an Active Learning Environment for the Learning of Stereometry	6
C. Christou, M. Pittalis, N. Mousoulides, D. Pitta, K. Jones, E. Sendova, P. Boytchev	
Classroom Use of Dynamic Geometry Software in the UK	6
Alison Clark-Wilson, Carol Knights	
Innovative multimedia approaches to mathematics education	7
Alison Clark-Wilson, Adrian Oldknow	
Assessing and Helping More Students Achieve Success with First in Math Online Program	7
Lynn Columba	
Developing of students' mathematical competences by using mathematical software	7
Donata Deßicka	
The Effects of the TI-Navigator System on Student Achievement and Attitude in Algebra	8
Barbara J. Dougherty, Margie Hobbs	
Computer Algebra Systems: A teacher centered study on the cognitive and didactic dimensions	8
Montserrat García-Campos, Teresa Rojano	
The Casyopée project: computer symbolic computation for students' better access to algebraic notation and rich mathematics	9
Jean-Michel Gelis, Jean-Baptiste Lagrange	

Drawing movement and insights for the proof process.....	9
Maria Alice Gravina	
The Role of Technology in the Writing of Mathematical Proofs.....	9
Samer Habre	
Modelling Intake and Clearance of Alcohol in Humans.....	10
André Heck	
Making Mathematics Simple, Attractive and Realistic.....	10
Jozef Hvorecký	
Do First Year Students Know how to Solve Simple Linear Equations? An Experiment with T-algebra.....	10
Marina Issakova	
Changes in Teaching and Learning with the Integration of Information and Communication Technologies.....	11
Edda Jiménez de la Rosa	
Introducing CAS in statewide mathematics examinations at the university entrance level: a brief case study.....	11
Peter Jones, David-Leigh Lancaster	
Graphing calculator as a tool for monitoring student's work.....	12
Edyta Juskowiak	
Teachers Training for Effective Use of IT in Mathematics Teaching.....	12
Jan Kašpar, Jarmila Robová	
Instructional design for teaching introductory Calculus to first year undergraduate students within a technology-enhanced distance learning environment at the University of South Africa ..	12
Rita Ndagire Kizito, Dirk Wessels, Jose Luis Cortina	
Mathematics teachers using technology in the classroom: the role of “emergent goals”.....	13
Jean-Baptiste Lagrange, Emel Ozdemir	
Study of Student Mistakes in Solving Simplification Problems on Paper and Possibility of these Mistakes in the T-algebra Environment.....	13
Dmitri Lepp	
Open Source CAS in Mathematical Education of Teachers.....	14
Joana Lipeikiene	
Design and use of an interactive computer programme for the teaching and learning of combinatorics.....	14
María Dolores Lozano, Emanuel Jinich, María Trigueros	
Computer Aided Learning of Proving in School Geometry.....	15
Zlatan Magajna	
Creating E-portfolio to Collect and Present the Evidence of Preservice Teachers’ Content Knowledge and Pedagogical Content Knowledge Growth at the Secondary Level.....	15
Agida Gabil Manizade, Megan Che	
Using Calculus-related Secondary Web Resources in a Course for Pre-service Teachers.....	16
Dragana Martinovic	
Using Virtual Manipulatives in Mathematics for Preservice Teachers.....	16
Maribeth McAnally, Vanessa Huse, Susan Bauer	
Reusable Assessment Objects in Mathematics Teaching.....	16
Michael McCabe	
How ActiveMath Supports Moderate Constructivist Mathematics Teaching.....	18
Erica Melis, Carsten Ullrich, George Gogvadze, Paul Libbrecht, Marianne Moormann	

Multimedia application Graphs as support in the study of Discrete Mathematics	18
Eva Milková, Martin Pozdřilek	
Teaching and learning mathematics with dynamic worksheets	18
Carsten Miller, Matthias Ehmann	
Environment for Symmetrical Patterns Creation	19
Milan Moravčík, Daniela Lehotská	
Mathematical Modelling Using Technology in Elementary School	20
N. Mousoulides, M. Pittalis, C. Christou, D. Pitta, P. Boytchev, B. Sriraman	
Spreadsheet Learning Environment (SLE) in a Required Mathematics Course	20
Jack Narayan, Robert Schell	
The Algebraic Modeling of Geometric Constraints in FeliX	20
Reinhard Oldenburg	
Using dynamic geometry software to encourage 3D visualization and modelling	21
Adrian Oldknow, Linda Tetlow	
Mathematics, science and technology teachers working collaboratively with ICT	21
Adrian Oldknow, Ron Taylor	
Static and dynamic statements in the proving process: focusing on change	22
Federica Olivero	
Analyzing and Enhancing Geometric Transformation Skills of Elementary Education pre-Service Teachers within an International Context	22
Sinan Olkun, Aliye Erdem, Glenn Gordon Smith, Helen Gerretson, Gwen Johnson	
Fractals as a context of comprehension of the meanings of the sequence and the limit in a Dynamic Computer Software environment	23
Stavroula Patsiomitou	
ALNUSET: a new artefact for teaching and learning algebra	23
Bettina Pedemonte, Giampaolo Chiappini	
On Topics That Technology Enables and are Foundational to Calculus at the Secondary Level	23
Antonio R. Quesada, Michael Smith	
The parts of computer games in process of math's teaching	24
Tadeusz Ratusiński	
Integrating Handheld Technology into Mathematics Instruction	24
Lila F. Roberts	
Teaching and Learning Concrete and Theoretical Arithmetic through Technology	25
Elisabetta Robotti, Giampaolo Chiappini	
Infinity at Primary and Secondary School: Signs and Meanings	25
Ornella Robutti	
Incorporation of the ICT to the Process of Teaching Statistics and Statistic Sampling in Management and Public Administration for Undergraduates	25
C. Roldán, M.V. Alba, N. Ruiz-Fuentes	
Barriers to Interdisciplinary Computational Innovations in Education	26
Mary E. Searcy, Jill E. Thomley	
Technological Challenges of Teaching Mathematics in a Blended Learning Environment	26
Petr Sojka, Roman Plch	
Using simulations on MATLAB® to help crack difficult mathematics problems	26
Alexander Stanoyevitch	
Does the Technology Acceptance Model explain the use of technology for mathematics instruction?	27
Gerrit Stols	

Innovative approaches using ICT to support the teaching and learning of Advanced Mathematics: ICTAM	27
Linda Tetlow, Adrian Oldknow	
Geometry Expressions – A Dynamic Symbolic Geometry Environment	28
Philip Todd	
Branch Completeness in School Mathematics and in Computer Algebra Systems	28
Eno Tonisson	
Teachers' practice and students' learning in the Mexican programme for Teaching Mathematics with Technology.....	29
María Trigueros, Ana Isabel Sacristán	
Incremental-evolutionary Systemic Changes in Teaching and Learning via Dynamic Mathematics	29
Volker Ulm	
Using technology in the mathematics class: how this affects students' achievement and attitudes	29
Sonia Ursini, Martha Patricia Ramirez, Gabriel Sánchez	
Different kinds of understanding of the concept of parameter	30
Katarzyna Wadoń	
Dynamic Web Tools for Trigonometry.....	30
Steven J. Wilson	
CreaComp: Computer-Supported Experiments and Automated Proving in Learning and Teaching Mathematics	31
Wolfgang Windsteiger, Günther Mayrhofer, Susanne Saminger	
The role of computer in the independent extracurricular work of student	31
Renata Wojtuś, Stanislaw Staszic	
Introduction of conics in form 11 with the help of GeoGebra	31
Otto Wurnig	
Teaching Mathematics On-line: Alaskan Experience	32
Victor Zinger	
Posters	
Modelling Environmental Data.....	33
David Driver	
A Dynamic Environment for Matrices.....	33
Roberta Grech	
Computer Aided Teaching of Mathematical Modeling	33
Anna Hapáková	
The influence of the graphing calculator on the development of some mathematical activities of pupils in the age between 13-16 years old	34
Agnieszka Herma	
The role of scripts (custom tools) in the construction of meaning in a Dynamic Geometry environment.....	34
Eygenia Koleza, Stavroula Patsiomitou	
The Assessment of an Individualized Mathematics Activity	35
Brenda Lee	
Teachers' Views on the Use of Graphics Calculators in High School Math Classes: A Case Study in Turkey.....	35
Şenay Madenoğlu, Yaşar Ersoy	

Teacher development with Geometer's Sketchpad: Potentials and pitfalls	35
Gerrit Stols, Dirk Wessels	
Visual Representations of Native American High School Students Using CBL-Motion Detector ...	36
Ku Sunmi	
Attitude of Mathematics Teacher towards the use of Computer Technology in Classroom.....	36
Muhammad Tanveer Afzal, Muhammad Azeem	
The National Computational Science Institute: The Development of a Professional Community ...	37
Jill E. Thomley, Mary E. Searcy	
Workshops	
Towards an integrated learning environment for mathematics	38
Christian Bokhove, Gerard Koolstra, Peter Boon, André Heck	
Teaching probability at secondary schools using computers	38
Michal Čihák	
Students' Perceptions of Graphing Calculator in High School Math Courses: A Case Study in Turkey	39
Seda Eren, Hacer Unver	
Using Handheld Technology and Genuine Data to Enhance the Preparation for Calculus	39
Gregory D. Foley	
Using a Spreadsheet Tool of a Graphing Calculator	40
Jozef Hvorecký, Lilla Koreňová	
Enriching Education of Mathematics and Science by Using a Graphing Calculator	40
Lilla Koreňová, Jozef Hvorecký	
Interactive Geometry Labs – US Russian Approach.....	41
Irina Lyublinskaya, Valeriy Ryzhik	
Making Connections: Technology Based Science Experiments for Teaching and Learning Mathematics	42
Irina Lyublinskaya	
Advanced Techniques in Interactive Geometry	42
Kate Mackrell	
Calculators: A Tool to Develop Number Sense for Pre-Service Elementary Teachers	42
Stuart Moskowitz	
Project Interactivate Applets in Mathematics Teacher Education	43
Meg Moss	
Preparing Teacher Candidates to Teach Mathematics Using Technology: Creating a Classroom Network.....	44
Judy O'Neal, Christine Browning	
Connecting Mathematical Concepts to Real-world Application: Using Digital Cameras in Teacher Education Courses	44
Brian Sharp	
Intelligent problem solving environment T-algebra.....	45
Eno Tonisson, Marina Issakova, Dmitri Lepp, Rein Prank	