7th CADGME
Conference on Digital Tools in Mathematics Education

Monday, 25.06.2018

Registry (1st floor)
16h-18h

Tuesday, 26.06.2018

Registry (1st floor)
8h30

Opening Ceremony
(Room Pedro Nunes)
9h-9h30
Keynote Speaker: Katarzyna Winkowska-Novak
(Room Pedro Nunes)
9h30-10h30

Coffee Break
(2nd floor)
10h30-11h

Workshops: WS1 + WS4
(Room Lab. 0.2 + Room 2.3)
11h-12h30

Parallel Sessions: PS1 + PS3
(Room 2.4 + Room 2.5)
11h-12h30

Lunch
(Inst. Justiça e Paz)
12h30-14h

Working Group: WG1 + WG7
(Room 17 Abril + Room 2.3)
14h-15h30

Workshops: WS2
(Room Lab. 0.2)
14h-15h30

Parallel Sessions: PS1 + PS3
(Room 2.4 + Room 2.5)
14h-15h30

Coffee Break
(2nd floor)
15h30-16h
Working Group: WG3  (Room 2.3)  16h-17h30

Workshops: WS9  (Room Lab. 0.2)  16h-17h30

Parallel Sessions: PS1 + PS3  (Room 2.4 + Room 2.5)  16h-18h00

Welcome Reception (Porto wine tasting)  
(2nd floor)  
18h00-19h00

Wednesday, 27.06.2018

Working Groups: WG1  (Room 17 Abril)  8h30-11h

Working Groups: WG2  (Room 2.3)  8h30 - 10h30

Working Groups: WG3 + WG4  
(Room 2.4 + Room 2.5)  
9h-11h

Coffee Break  
(2nd floor)  
11h-11h30

Keynote Speaker: Ornella Robutti  
(Room Pedro Nunes)  
11h30-12h30
Lunch
(Inst. Justiça e Paz)
12h30-13h45

Keynote Speaker: Kristof Fenyvesi
(Science Museum)
13h45-14h45

Keynote Speaker: TAME - Pedro Freitas
(Science Museum)
14h45-15h15

Keynote Speaker: TAME - Robert Fathauer
(Science Museum)
15h15-15h45

Coffee Break
(Science Museum - grab&go)
15h45-16h

Social Programme
16h-19h
Invited Talk; Visit to the Science Museum; Visit to the University; Walk Downtown

Gala Dinner
20h-23h30
Galla Dinner at "Colo da Graça" and a performance of "Fados de Coimbra"
Thursday, 28.06.2018

**Working Groups: WG2 + WG7**
(Room 17 Abril + Room 2.5)
9h-11h

**Working Group: WG1 + WG5**
(Room 2.3 + Room 2.4)
9h-10h30

**Workshop: WS7**
(Lab. 0.2)
9h-10h30

**Coffee Break**
(2nd floor)
11h-11h30

**Keynote Speaker: Jaime Carvalho e Silva**
(Room Pedro Nunes)
11h30-12h30

**Lunch**
(Inst. Justiça e Paz)
12h30-14h
Working Groups: WG6
(Room 2.3)
14h-15h30

Workshops: WS5
(Lab. 0.2)
14h-15h30

Parallel Sessions: PS2
(Room 2.4)
14h-15h30

Coffee Break
(2nd floor)
15h30-16h

Working Groups: WG4
(Room 2.3)
16h-17h30

Workshops: WS3
(Lab. 0.2)
16h-17h30

Parallel Sessions: PS2
(Room 2.4)
16h-17h30
Friday, 29.06.2018

**Working Groups: WG2 + WG4**  
(Room 17 Abril + Room 2.3)  
9h-11h

**Working Groups: WG5**  
(Room 2.4)  
9h-10h30

**Parallel Sessions: PS2**  
(Room 2.5)  
9h-11h

**Coffee Break**  
(2nd floor)  
11h-11h30

**Keynote Speaker: Philippe R. Richard**  
(Room Pedro Nunes)  
11h30-12h30

**Lunch**  
(Inst. Justiça e Paz)  
12h30-14h

**Excursion (optional)**  
14h30-23h  
Batalha; Alcobaça; Nazaré (dinner at Nazaré)
Working Groups

WG1 - 26/06 - (14h) - Chair: Zsolt Lavicza (Room 17 Abril)
-- Daniela Ferrarello, Maria Flavia Mammana and Eugenia Taranto -- Non-Euclidean Geometry with art by means of GeoGebra
-- Eleonora Stettner -- Traditional Patterns of Easter Eggs in the Carpathian Basin and Spherical Symmetries (Illustrating Spherical Symmetries in GeoGebra)
-- Alvaro Martínez Sevilla -- Hyperbolic Escher GeoGebra

27/06 - (8h30) - Chair: Carlota Simoes (Room 17 Abril)
-- Zsolt Lavicza, Kristóf Fenyvesi, Philip Collett, Thierry Dana-Picard, Sara Hershkowitz, Werner Olivier, Gyorgy Tury, Gabriella Uhl and Diego Lieban -- STEAM for the Future - Integrating Hungarian, Israeli and South African Arts into Mathematics Teaching
-- Daniel Lakos and Eszter Losonczi -- Jump from paper
-- Penousal Machado and Tiago Martins -- Evolved Artificial Ants Paintings on Instagram
-- Alvaro Martínez Sevilla -- Book Presentation: around the “Paseos Matemáticos por Granada”
-- Tomas Recio -- Exploring artwork through Voronoi/Delaunay diagrams

28/06 - (9h) - Chair: Vanda Santos (Room 2.3)
-- Alla Stolyarevska -- DeepDream reveals the connection between art and mathematics
-- Valentyna Pikalova, Oksana Hrytsenko and Iryna Rusina -- Exploring Ukrainian Embroidery with GeoGebra and Python
-- Diego Lieban and Zsolt Lavicza -- Moving to Spatial Thinking through Geometric Modeling: an approach among prospective teachers combining Physical and Digital Resources
WG2 - 27/06 - (8h30) - Chair: Yoichi Maeda (Room 2.3)

-- Satoshi Yamashita and Setsuo Takato -- Active Learning Class Using PDF-Based Video Materials Generated Using KeTCindy

-- Naoki Hamaguchi and Setsuo Takato -- Effective combinations of several types of teaching materials

-- Tomoya Tokairin -- A new 3D drawing plugin for Cinderella

-- Ulrich Kortenkamp and Lena Florian -- Big Data and Next Generation Visualization in the Classroom

28/06 - (9h) - Chair: Masetaka Kaneko (Room 17 Abril)

-- Koji Nishiura -- Analysis of the Usefulness of Teaching Materials Including Sound Created by KeTCindy

-- Shunji Ouchi -- An introduction to teaching materials to guide sample size decisions when using the Central Limit Theorem

-- Takeo Noda and Setsuo Takato -- Teaching materials for vector calculus and elementary differential geometry course using KeTCindy

-- Christian Mercat -- Teaching complex analysis with a conformal webcam

29/06 - (9h) - Chair: Ulrich Kortenkamp (Room 17 Abril)

-- Masataka Kaneko and Takeo Noda -- Students’ operating CindyJS materials and detecting their reasoning

-- Yoichi Maeda -- Simple construction of Hopf fibration with Cabri 3D and visualization of multiplication of unit quaternions

-- Hideyo Makishita -- Visualize mathematics by mathematical structures and figures

-- Aaron Montag and Jürgen Richter-Gebert -- GPU Accelerated Visualizations in Education

WG3 - 26/06 - (16h) - Chair: Walther Neuper (Room 2.3)

-- Daniel McDonald -- Automated Drawings, Conjectures, and Proofs in Planar Geometry Using The Wolfram Language

-- Tomas Recio, Philippe R. Richard and M. Pilar Velez -- Designing tasks supported by GeoGebra Automated Reasoning Tools for the development of mathematical skills

-- Vanda Santos, Nuno Baeta and Pedro Quaresma -- Geometrography in GeoGebra
27/06 - (9h) - Chair: Anatoli Kouropatov (Room 2.4)
-- Rein Prank -- Step by step solutions of algebraic tasks and educational facilities of CAS
-- Walther Neuper -- Mechanised Justification in "Systems that Explain Themselves" for Mathematics Education
-- Thierry Dana-Picard and David Zeitoun - The determination of a suitable mesh for automatic plotting of a 2-variable function
-- Daniela Ferrarello, Maria Flavia Mammana and Eugenia Taranto -- DGS in proving 3D-geometry properties

WG4 - 27/06 - (9h) - Chair: Pedro Quaresma (Room 2.5)
-- Thierry Dana-Picard and Zoltan Kovacs -- Automated study of isoptic curves: a new approach with GeoGebra
-- José Manuel Dos Santos -- Spherical Tilings and GeoGebra
-- Tomoki Hara and Kazushi Ahara -- On materials which allows pupils to find out mathematical propositions using snapping on GeoGebra
-- Mária Kmeťová, Renáta Vágová and Tibor Kmeť - Investigation and Visual Explanation in Dynamic Geometry Environment

28/06 - (16h) - Chair: Vanda Santos (Room 2.3)
-- Zoltán Kovács and Zsuzsanna Cole -- Wise use of GeoGebra supported by an evaluation routine
-- Jiří Blažek and Pavel Pech -- GeoGebra and one locus in a plane
-- Renáta Vágová and Mária Kmeťová -- Does the Use of Iconic Planar Representations Affect Learner's Visualisation in Solid Geometry Problem Solving?

29/06 - (9h) - Chair: Ana Breda (Room 2.3)
-- Lilla Korenova and Jan Guncaga -- Discovery learning mathematics with GeoGebra through mobile devices in lower secondary level
-- Marita Barabash -- GeoGebra as a Dynamic Geometry tool in mathematics and in mathematics teaching: a case of geometric constructions
-- Pedro Quaresma and Vanda Santos - Learning Paths Editor for the Web Geometry
Laboratory
-- Jiří Blažek and Pavel Pech -- Synthetic solution in geometry and GeoGebra

WG5 - 28/06 - (9h) - Chair: Anatoly Kouropatov (Room 2.4)
-- Michal Fraenkel, Anatoli Kouropatov and Regina Ovodenko -- Didactic consideration with respect to applets for the teaching of mathematics
-- Claudia Lazaro and Tomas Recio -- Project MoMaTrE (Mobile Maths Trails in Europe, www.momatre.eu)
-- Giulia Bini and Germana Trinchero -- Changing Plans: How dynamic Merlo items can support students’ understanding in 3d Geometry

29/06 - (9h) - Chair: Zsolt Lavicza (Room 2.4)
-- Sonia Abrantes Garcez Palha -- Designing a digital tool for reasoning with covariation graphs: didactical considerations and classroom experience
-- José Manuel Diego-Mantecón, Óscar Arcera, Teresa F. Blanco and Zsolt Lavicza -- Building a Robot with Secondary School Students to Solve the Rubik Cube
-- Werner Olivier - An offline techno-blended model for enriching mathematics teaching and learning in South African schools

WG6 - 28/06 - (14h) - Chair: Jozef Hvorecký (Room 2.3)
-- Cristina Naya -- Activities for the classroom with scientific calculator (Mathematics in Secondary level)
-- Eszter Kónya and Zoltán Kovács -- Do the calculators support inductive reasoning?
-- Lilla Korenova and Jozef Hvorecky -- Learning Descriptive Statistics using CASIO Classwiz Calculators

WG7 - 26/06 - (16h) (Room 2.3)
-- Antonio Zarauz Moreno, José Luis Rodríguez Blancas and Diego Cangas Moldes -- NeoTrie
28/06 - (9h) - Chair: Christian Mercat (Room 2.5)

-- Christian Mercat and Laurent Beddou -- Augmented reality in Pétanque as a teaching tool
-- Alvaro Martínez Sevilla, Carlos Ureña Almagro and Tomás Recio -- Augmented Reality, Maths Walks and GeoGebra
-- Lilla Korenova, Theodosia Prodromou and Zsolt Lavicza -- Augmented reality in mathematics Education: A cross-national study

Workshops

WS1 - 26/06 - (11h) -- Ana Cristina Oliveira -- The use of GeCl program for studying plane symmetry (Lab. 0.2)

WS2 - 26/06 - (14h) -- Eugenia Taranto, Ferdinando Arzarello, Ornella Robutti, Virginia Alberti and Sara Labasin -- MOOC for mathematics teacher education: a collaborative space for learning (Lab. 0.2)

WS3 - 28/06 - (16h) -- Kristóf Fenyvesi, Hogul Park, Diego Lieban and Zsolt Lavicza -- Problem-solving based Combination of Hands-on and Digital Modelling in the Process of Mathematics Learning: 4Dframe & GeoGebra in the Exploration of Simple and Complex Structures and Mechanisms (Lab. 0.2)

WS4 - 26/06 - (11h) -- Setsuo Takato, Yasuyuki Kubo and Masataka Kaneko -- Usage and recent developments of KetCindy (Room 2.3)

WS5 - 28/06 - (14h) -- Diego Lieban, Zsolt Lavicza, Kristóf Fenyvesi, Hogul Park and Taeyoung Choi -- Who do You Feel Yourself? An Engineer, Mathematician, Programmer, Artist or Phycisst...It doesn’t Matter, Just Play (Lab. 0.2)

WS7 - 28/06 - (9h) -- Dennis Debay and Karen Terrell -- Stories & Technology: Gateways into Mathematics for All (Lab. 0.2)
WS9 - 26/06 - (16h) -- Lilla Korenova, Jan Guncaga and Jozef Hvorecky -- Making a Graphic Calculator from a Numerical One (Lab. 0.2)

Parallel Sessions

PS1 - 26/06 - (11h) - Chair: Csaba Sárvári (Room 2.4)

-- Celina A. A. P. Abar and Ubirajara Carnevale De Moraes -- Flipped Classrooms and MOODLE: Digital Technologies To Support Teaching and Learning Mathematics

-- Robert Weinhandl and Zsolt Lavicza -- Teacher Training for a Technology-Enhanced Flipped Classroom in Mathematics Education

-- Umberto Dello Iacono, Anna Pierrri and Eugenia Taranto - Peer review methodology in a blended course for teacher education

26/06 - (14h) - Chair: Csaba Sárvári (Room 2.4)

-- Mamdouh Soliman, Maryam Al-Kandari, Tony Houghton, Zsolt Lavicza and Theodosia Prodromou -- Enhancing teachers to integrate technology in teaching mathematics in Kuwaiti classrooms

-- Fabián Vitabar, Zsolt Lavicza and Markus Hohenwarter -- Training teachers to use technologies in mathematics lessons: identifying key experiences for a successful teachers’ learning process

-- Kan Guo, Shuang Song and Lavicza Zsolt -- Influential Factors of Mathematics Teachers’ Technological Pedagogical Content Knowledge in China

26/06 - (16h) - Chair: Zsolt Lavicza (Room 2.4)

-- Osama Swidan and Naomi Prusak -- Developing Pre-Service Teachers’ Collaborative Learning and Argumentation Skills in Computer-Supported Collaborative Environments

-- Chantelle Bosch -- Cooperative learning as a strategy for self-directed learning in a blended-distance learning Mathematics environment

-- Ana Donevska-Todorova -- Applications of Congruence Transformations with Technology-Enhanced Materials

-- Valentyna Pikalova, Denys Stolbov and Mariia Kolesnik -- Designing and Creating IoT Devices with Pre-service Teachers
PS2 - 28/06 - (14h) - Chair: Zsolt Lavicza (Room 2.4)

-- Ilona Olahne Teglasi -- Introducing Complex Basic Program in Hungary’s primary schools as a prevention against early school leaving

-- Sofya Lyakhova -- Post-16 school students’ experience of studying advanced mathematics courses online and face-to-face as an additional non-timetabled option

28/06 - (16h) - Chair: Zsolt Lavicza (Room 2.4)

-- Dorothy Laubscher -- Technology supported design-based intervention to support teachers in implementing Realistic Mathematics Education

-- Helena Koldová, Dagmar Melicharová, Vladimira Petraskova and Přemysl Rosa -- Interdisciplinary relations supporting propaedeutics of mathematics in primary education

-- Cecilia Russo, Zsolt Lavicza and Fabian Vitabar -- Designing Gamification environments for the teaching and learning mathematics

29/06 - (9h) - Chair: Csaba Sárvári (Room 2.5)

-- Gergely Wintsche and György Emese -- The Changing Usage of Teaching Tools in Hungary

-- Ana Paula Lima Gandra, Ana Paula Aires and Paula Catarino -- Learning how to solve linear equation with Equation Buster

-- Roi Shillo and Zsolt Lavicza -- Detecting students’ creativity from data streams derived from online exercises

-- Dragica Milinković and Sladana Mitrović -- Effects of different methodical approaches on solving systems of equations with two unknowns in the differentiated mathematics teaching

PS3 - 26/06 - (11h) - Chair: Djordje Herceg (Room 2.5)

-- Thierry Dana-Picard and Sara Hershkovitz -- Tessellations: from childhood to cosmology

-- Natalija Budinski, Zsolt Lavicza and Kristóf Fenyvesi -- Teaching basic mathematical concepts with Origami and GeoGebra for fifth-grade primary school students

-- Bruno Leite Ferreira, Rúbia Schio and Zsolt Lavicza -- Aspects Considered To Prepare GeoGebra APPLETS for Understanding Generality of Conics
26/06 - (14h) - Chair: Diego Lieban (Room 2.5)
-- Daniel Milow -- Why and how an implementation of the rotational angle aspect can support students to develop a proper idea of angles
-- Ana Cristina Oliveira -- ATRACTOR – Virtual Tools in Mathematics Communication
-- Ildikó Perjési-Hámori -- Computer algebra systems (CAS) as a bridge between Mathematics and Engineering

26/06 - (16h) - Chair: Ildikó Perjési-Hámori (Room 2.5)
-- Djordje Herceg, Dejana Herceg, Vera Herceg Mandić and Davorka Radakovic -- Subject-specific components in dynamic geometry software
-- Světlana Tomiczková -- How to use Geometric Software in Courses of Differential Geometry
-- Jorge Marques and Nuno Baeta -- The indifference curve analysis - An alternative approach represented by ODEs using GeoGebra
-- Blanka Šedivá -- The using of Monte Carlo simulation in the teaching process