



## Program of ATCM 2017

### December 15, 2017 (Friday)

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|-------------|--------------------------|
| 17:00-18:00 | <b>Registration:</b>     |
| 18:30-20:30 | <b>Welcome Reception</b> |

### December 16, 2017 (Saturday)

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|-------------|-------------------------|
| 8:00-8:50   | <b>Registration</b>     |
| 9:00-10:00  | <b>Opening ceremony</b> |
| 10:00-10:30 | <b>Tea Break</b>        |

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| <b>10:30-11:20</b> | <b>Plenary Speech 1: Auditorium Room (Chair: Yuan Yuan)</b><br>21453 Is Technology Taking Mathematics Education in the Right Direction? - Douglas Butler   |
| <b>11:30-12:20</b> | <b>Invited Speaker 1: Room 4: (Chair: Janchai Yingprayoon)</b><br>21531 Exploring Statistics with TinkerPlots in Flipped Classroom - Krongthong Khairiree  |
|                    | <b>Invited Speaker 2: Room 5: (Chair: Tzu-Ling Wang)</b><br>21533 Design Innovative Teaching Aids and Creative Activities to Help Children Understand Mathematics Concepts and Excited about Learning Mathematics - Poh Yew Teoh |
|                    | <b>Invited Speaker 3: Room 6: (Chair: Keng Cheng ANG)</b><br>21523 Appreciating Functional Programming: A Beginner's Tutorial to HASKELL Illustrated with Applications in Numerical Methods - Weng Kin Ho                        |
| <b>11:30-12:30</b> | <b>Hands-on Workshops</b> (CAL stands for calculator workshops; COMP stands for computer workshops)  |
|                    | (CAL Room 1) 21425 Investigating Mathematics in the Middle Years with ClassWiz - Barry Kissane   |
|                    | 20561 Examples and Techniques of Morphing within CAS and DGS Environments (Cabri and TI-Nspire). A Way of Enriching our Teaching at all Levels - Jean-Jacques Dahan  |
| <b>12:30-13:30</b> | <b>Lunch Break</b>   |
|                    | <b>Invited Speaker 4: Room 4: (Chair: Shin-shin Kao)</b><br>Dynamic Mathematics MicroWorld with Virtual Manipulative - Tso, Tai-Yih  |
|                    | <b>Invited Speaker 5: Room 5: (Chair: Jin-Ching Lee)</b><br>回顧新加坡教師使用圖形計算機進行數學教學和評量的經驗: Ng Wee Leng  |

<b>Invited Speaker 6: Room 6: (Chair: Ming Gong Lee)</b>	
21500 Hawgent 皓駿數學實驗室 · 從設計、研發、建設到應用-Chuan-Bo Zuo	
<b>13:30 - 14:30</b>	<b>Hands-on Workshops</b> (CAL stands for calculator workshops; COMP stands for computer workshops)
	(CAL Room 1) 21438 Collaborative Learning in the Mathematics Classroom - Katrina Ng
	(CAL Room 2) 21463 Using Technology in Mathematics Teaching Calculus-Yong Hor Lee
	(COMP Room 7) 21535 A Beginner's Tutorial to Functional Programming via HASKELL -Weng Kin Ho
	(COMP Room 8) 21432 Linkage Formed by Skeletal Rhombohedra Complex- Jen-chung Chuan
<b>14:30-15:30</b>	<b>Parallel Session I: Presentations</b> (Each contributed paper presentation slot is 20 minutes, unless otherwise specified. Please allow 3 minutes for Q&A, and 2 minutes for changeover)
<b>Room 1: (Chair: Wee Leng Ng)</b>	
14:30-14:55	21490 A Retrospective Study on the Effects of Flipping a Calculus Course-Wee Leng Ng, Kok Ming Teo
15:00-15:25	21456 Graphing a Quadrilateral Using a Single Cartesian Equation-Lai Wei, Weng Kin Ho
<b>Room 2: (Chair: Angela Thompson)</b>	
14:30-14:55	21467 An Alternative Model of Online Mathematics Instruction to Promote Student Support-Angela Thompson, Alexander Radosavljevic
15:00-15:25	21428 Making Mathematics Engaging with Technology- Maree Skillen
<b>Room 3 (Chair: Zsolt Lavicza)</b>	
14:30-14:55	21497 Geometric Modeling as Spatial Thinking Approach among Prospective Teachers-Diego Lieban, Zsolt Lavicza
15:00-15:25	21489 Collaborative Summarizing Feature: Supporting Group Knowledge Construction in an Online Discussion Forum-Kasiyah Junus, Harry Budi Santoso, Heru Suhartanto, et al.
<b>14:30 - 15:30</b>	<b>Hands-on Workshop</b> (CAL stands for calculator workshops; COMP stands for computer workshops)
	(CAL Room 4) 21539 Learning Fractions the Fun and Magical Way-Poh Yew Teoh
	(COMP Room 7) 21451 Using Digital Resources for Handling Large Data Sets and Understanding Basic Statistical Principles-Douglas Butler
	(COMP Room 8) 21465 Discovering Cabri Express -Jean-Jacques Dahan, Jean-Marie Laborde
<b>15:30-16:00</b>	21496 Application of Mathematics to Mathematics for Geometric Construction Using by CUI and GUI -Hideyo Makishita
	21501 Hawgent 皓駿數學實驗室建設方案及專案案例-Chuan-Bo Zuo, Hui-Jiao Li, Yan-Dong Liu
	21508 240 Distinct Soma Cubes-Hui Hsiang Chen
	21532 The Path Analysis of Structure, Intrinsic Motivation, and Performance of Polynomial Multiplication in Junior High School-Hsiu Ju Chang

	21524 The Effect of Instruction by Mathematics Competence-based Grouping for Grade Eight Students -Pei-Jung Hsieh, Hsin-Ying Huang
	21433 Hamiltonian Cycles Associated with Polyhedron 2-Wei-Jhe Jhang
<b>Parallel Session II Presentations</b> (Each contributed paper presentation slot is 20 minutes, unless otherwise specified. Please allow 3 minutes for Q&A, and 2 minutes for changeover)	
<b>Room 1: (Chair: Hazel Tan )</b>	
16:00-16:25	21477 Pre-service Mathematics Teachers' Preceptions Relating to the Use of Coding for Teaching Mathematics -Hazel Tan
16:30-16:55	21493 A Framework for Primary School Mathematics Teachers to Decide When to Use Calculators with Their Pupils.-YEO Kai Kow Joseph
17:00-17:25	21498 從簡單運算到函數概念 · 例談 Hawgent 皓駿支持下的中小學數學教學設計策略- Chuan-Bo Zhu, Yan-Qin Lin
<b>Room 2: (Chair: Hartono Hartono)</b>	
16:00-16:25	21491 Visually Analyze of Stability of Dynamical System Using Parallel Coordinate-Hartono Hartono
16:30-16:55	21457 Application of Sharing Economy to the Teaching and Learning of Junior High School Geography-Ming-Gong Lee, I-Hui Chen
17:00-17:25	21445 Enhanced Teaching and Learning of Structural Dynamics with Computer Algebra Systems-Thomas Hu
<b>Room 3: (Chair: Thomas Walsh)</b>	
16:00-16:25	21423 Exploring Computer Science with MicroworldsEX to Learn Geometry and Logo Programming Code-Thomas Walsh
16:30-16:55	21424 The Survey Toolkit Curriculum Methodology for Researching Information, Survey Questioning, and Analyzing Data with TinkerPlots@-Thomas Walsh
17:00-17:25	21510 The Effect of Geogebra on Students' Performance in Algebraic Concepts: The Case of Applications of Kuwait Project-Mamdouh Soliman, Zsolt Lavicza, Maryam Al-Kandary
<b>16:00 - 17:00</b>	<b>Hands-on Workshop</b> (CAL stands for calculator workshops; COMP stands for computer workshops)
	(CAL Room 4) 21460 Solving Problems with CAS and HP Prime-GT Springer
	(COMP Room 7) 21520 Programming Fractals in 3D Virtual Reality (1)-Andy Yeh
	(COMP Room 8) 21548 Iterate in GeoGebra and Realize by Origami - Wenwu Chang, Chang-Sou Kuan
09:00-17:00	<b>Exhibitions</b>
18:30-21:00	<b>International Program Committee Meeting</b>

<b>December 17, 2017 (Sunday)</b>	
<b>8:00-8:50</b>	<b>Registration</b>
<b>9:00-9:50</b>	<b>Plenary Speech 2: Auditorium Room: (Chair: Ma. Louise Antonette De Las Penas)</b> 21525 Teaching Mathematical Modelling in a Technology-Enabled Environment Keng Cheng Ang
<b>10:00-10:30</b>	<b>Tea Break</b>
<b>10:30-11:20</b>	<b>Invited Speaker 7: Room 4: (Chair: Weng Kin HO)</b> 21552 A Litany of Ladders: Easy Problems with Hard Solutions -Alasdair McAndrew
	<b>Invited Speaker 8: Room 5: (Chair: Jen-chung Chuan)</b> 21516 A New Model for Calculating Sphere Volume-Wenwu Chang
	<b>Invited Speaker 9: Room 6: (Chair: Kuo-Long Chen)</b> 計算機在台灣高中數學課程的角色』是什麼？ Wang Claire
<b>11:30-12:30</b>	<b>Parallel Session III: Presentations</b> (Each contributed paper presentation slot is 20 minutes, unless otherwise specified. Please allow 3 minutes for Q&A, and 2 minutes for changeover)
	<b>Room 1: (Chair: Young Hee Geum)</b>
11:30-11:55	21549 Dynamical Behavior of an Iterative Method - Young Hee Geum
12:00-12:25	21440 How Middle-School Mathematics Textbooks Suggest Technology Use in Mathematics Classrooms-Mihyun Jeon, Gooyeon Kim
	<b>Room 2: (Chair: Wing Kin Cheng)</b>
11:30-11:55	21483 Techno-Pedagogical Task Design in Learning Travel Graph for Hong Kong Primary 6 Students -Wing Kin Cheng
12:00-12:25	21487 Research on the Teaching Methods Deepen the Argument in Problem Solving-Tsutomu Ishii
	<b>Room 3: (Chair: Andy Yeh)</b>
11:30-11:55	21505 Mathematics, Virtual Reality, and Programming-Andy Yeh
12:00-12:25	21437 On the Surveys of Flipped Classes in Korea University-Jeongwhan Choi, Jiye Choi, Junkyung Kim
<b>11:30 - 12:30</b>	<b>Hands-on Workshops</b> (CAL stands for calculator workshops; COMP stands for computer workshops)
	(CAL Room 4) 21426 Learning School Mathematics with ClassWiz, and Advanced Scientific Calculator -Barry Kissane
	(COMP Room 7) 21452 Using Dynamic Software to Help Students Visualise Key Principles Using a Sympathetic User Interface-Douglas Butler
	(COMP Room 8) 21466 Modelling a Submarine in Action with Cabri 3D -Jean-Jacques Dahan, Jean-Marie Laborde
<b>12:30-13:30</b>	<b>Lunch Break</b>
13:30-14:20	<b>Invited Speaker 10: Room 4: (Chair: Wenwu Chang)</b> 32000 Designing Circumscribable Heptahera Inspired by Sangaku-Jen-chung Chuan <b>Invited Speaker 11: Room 5: (Chair: Alasdair McANDREW)</b>

	21454 Using the Riemann Sums to Evaluate Areas and Volumes within DGS and CAS environments (TI-Nspire and Cabri): Enriching Dialectic Between Math Knowledge and Technical Skills-Jean-Jacques Dahan <b>Invited Speaker 12: Room 6: (Chair: Chun Hung Lin)</b>
	21544 Enhancing Conceptual Understanding through Modeling and Multiple Representations in Problem Solving-Padmanabhan Seshaiyer, Jennifer Suh
14:30-15:30	<b>Parallel Session IV: Presentations</b> (Each contributed paper presentation slot is 20 minutes, unless otherwise specified. Please allow 3 minutes for Q&A, and 2 minutes for changeover)
	<b>Room 1: (Chair: Zsolt Lavicza )</b>
14:30-14:55	21446 Origami and Paper-folding Activities as Tools for Teaching Mathematical Content with Elements of Programming -Natalija Budinski, Zsolt Lavicza, Kristof Fenyesi
15:00-15:25	21447 Technology-related Trends and Examples in STEM Education Research-Zsolt Lavicza, Kristof Fenyesi
	<b>Room 2: (Chair: Alasdair McAndrew)</b>
14:30-14:55	21484 Lindenmayer Systems, Fractals, and Their Mathematics -Alasdair McAndrew
15:00-15:25	21503 A Framework for Evaluating Computer Algebra Systems for Mathematics Teaching and Learning-Alasdair McAndrew
	<b>Room 3: (Chair: Leslie Chandrakantha)</b>
14:30-14:55	21471 Understanding Sampling Distributions Using Simulation in R -Leslie Chandrakantha
15:00-15:25	21444 Enhancement of Figures in STACK by Appending the Capability of Interactive Manipulations-Kenji Fukazawa, Yasuyuki Nakamura
	<b>Room 4: (Chair: Ryoji Fukuda)</b>
14:30-14:55	21495 Top-Down Expression of Mathematical Document for Nonvisual Communication- Ryoji Fukuda, Naoki Tamura, Yuki Toyosaka
15:00-15:25	Common Fixed Point Results for Multi-Valued Maps with Some Examples-Afrah Abdou
<b>14:30-15:30</b>	<b>Hands-on Workshops</b> (CAL stands for calculator workshops; COMP stands for computer workshops)
	(CAL Room 5) 21427 The Graphics Calculator is a Tool for Learning Mathematics-Barry Kissane
	(CAL Room 6) 21458 STEM Education - Hands-on Approach-Thomas Yeo
	(COMP Room 7) 21521 Programming Fractals in 3D Virtual Reality (2)-Andy Yeh
	(COMP Room 8) 21431 Heptahedra-Jen-chung Chuan
<b>15:30-16:00</b>	<b>Tea Break and Poster Session</b>
	21496 Application of Mathematics to Mathematics for Geometric Construction Using by CUI and GUI -Hideyo Makishita
	21501 Hawgent 皓駿數學實驗室建設方案及專案案例-Chuan-Bo Zuo, Hui-Jiao LI, Yan-Dong Liu
	21508 240 Distinct Soma Cubes-Hui Hsiang Chen
	21532 The Path Analysis of Structure, Intrinsic Motivation, and Performance of Polynomial Multiplication in Junior High School-Hsiu Ju Chang

	21524 The Effect of Instruction by Mathematics Competence-based Grouping for Grade Eight Students -Pei-Jung Hsieh, Hsin-Ying Huang
	21433 Hamiltonian Cycles Associated with Polyhedron 2-Wei-Jhe Jhang
<b>16:00-17:30</b>	<b>Parallel Session V Presentations</b> (Each contributed paper presentation slot is 20 minutes, unless otherwise specified. Please allow 3 minutes for Q&A, and 2 minutes for changeover)
	<b>Room 1: (Chair: Janchai Yingprayoon )</b>
16:00-16:25	32001 Study of Tones Characteristics in Thai Language Using Fast Fourier Transform (FFT)- Janchai Yingprayoon
16:30-16:55	32002 Thai License Plate Recognition Using Proportional and Filtering Method-Kann Yingprayoon
	<b>Room 2: (Chair: Pradyuta Padmanabhan)</b>
16:00-16:25	32003 Applications in Mathematics through Technology for Modeling Spread of Waterborne Disease in Networks- Pradyuta Padmanabhan, Pranav Unni
16:30-16:55	32004- Using Mathematics with Technology to Control Gang Activity in Puerto Rico- Pradyuta Padmanabhan, Miguel Castro-Rivera
	<b>Room 3: (Chair: Wu Chunlan)</b>
16:00-16:25	21480 The Practice and Reflection on Mathematical Inquiry Learning Based on Geogebra--the Example of Quadrilateral Congruent Conditions- Chunlan Wu, Hongyun Li
16:30-16:55	21478 Based on the New Curriculum Reform, Prime is Full of Charm in Teaching and Learning-Yapin Tian
<b>16:00-17:00</b>	<b>Hands-on Workshops</b> (CAL stands for calculator workshops; COMP stands for computer workshops)
	(CAL Room 4) Chinese workshop 21539 用有趣且魔法的方式學分數-Poh Yew Teoh
	(CAL Room 5) 21416 Having Fun with Augmented Reality-Wei Ching Quek
	(CAL Room 6) 33001 Exploring Technology in the International Baccalaureate-Christopher Longhurst
	(COMP1 Room 7) 21522 Programming Fractals in 3D Virtual Reality (3)-Andy Yeh
	(COMP2 Room 8) Chinese workshop 21499 利用 Hawgent 皓駿訂制個性化的動態數學軟體- Chuan-Bo Zuo, Chu-Biao Lin
<b>09:00-17:00</b>	<b>Exhibitions</b>
<b>18:30</b>	<b>Social and Free Time</b>

<b>December 18, 2017 (Monday)</b>	
<b>8:00-8:50</b>	<b>Registration</b>
<b>9:00-9:50</b>	<b>Plenary Speech 3: Auditorium Room:(Chair: Barry Kissane)</b> 21551 Discovering New Tessellations Using Dynamic Geometry Software-Ma. Louise Antonette De Las Penas, Eduard Taganap
10:30-11:30	<b>Tea Nreaks</b>
10:30-11:30	<b>Invited Speeches</b>
10:30-11:20	<b>Invited Speaker 13: Room 4: (Chair: Weng Kin Ho)</b> 21528 The Turing Bombe and its Role in Breaking Enigma-Neil Sigmon, Rick Klima
	<b>Invited Speaker 14: Room 5: (Chair: Jean-Jacques Dahan)</b> 21474 Counterexamples in Mathematics Education: Why, Where, and How? – Software aspect-Vladimir Nodelman
	<b>Invited Speaker 15: Room 6: (Chair: Wei-Chung Shann)</b> 21543 General Triangular Arrays of Numbers-Hung-ping Tsao
<b>11:30-12:30</b>	<b>Parallel Session VI Presentations</b> (Each contributed paper presentation slot is 20 minutes, unless otherwise specified. Please allow 3 minutes for Q&A, and 2 minutes for changeover)
	<b>Room 1: (Chair: Chin-Feng Chien)</b>
11:30-12:25 (50 minutes)	<b>Invited Speaker 16</b> 21517 Mathematical Analysis of Information Systems through Technology-En-Bing Lin, Yu-Ru Syau
	<b>Room 2: (Chair: Yosuke Sato)</b>
11:30-11:55	21470 On Possible Use of Quantifier Elimination Software in Upper Secondary Mathematics Education-Yosuke Sato, Ryoya Fukasaku
12:00-12:25	21481 Pade Approximant Using IS CZ Method-Haruka Mishima, Hiroshi Kai
	<b>Room 3: (Chair: Ryoji Fukuda)</b>
11:30-11:55	21492 Vector Data Viewer for Distribution Glance-Ryoji Fukuda, Yuki Toyosaka
12:00-12:25	21502 Constitution of the Proof Using the Isabelle Theorem Prover-Tadashi Takahashi, Fumiya Iwama
	<b>Room 4: (Chair: Rebecca Tolentino)</b>
11:30-11:55	21462 Modified Penalty Method for Solving Transportation Model-Rebecca Tolentino
12:00-12:25	21419 Optimal Bias Control in Causal Inference via Semidefinite Programming and Eigen-Analysis- Rahul Mukherjee
<b>11:30-12:20</b>	<b>Hands-on Workshops</b> (CAL stands for calculator workshops; COMP stands for computer workshops)
	(CAL Room 5) 21468 Using Graphing Technology To Teach Trigonometry-Yew Fook Chan
	(CAL Room 9) 21459 Euler's Method - A Programming Approach-Thomas Yeo
<b>12:30</b>	<b>Lunch Boxes Will Be Handed Out To Paid Participants At The Bus</b>
<b>12:30---</b>	<b>Conference Tour for Paid Foreign Participants</b>
<b>9:00-13:30</b>	<b>Exhibitions</b>

**18:30**

**Conference Dinner and Culture Night**



<b>December 19, 2017 (Tuesday)</b>	
<b>08:00-08:50</b>	<b>Registration</b>
<b>09:00-09:50</b>	<b>Plenary Speech 4 : Room 5: (Chair: Wei-Chi Yang)</b> 21538 The Third Generation of Calculus (Calculus without Limit Theory) Jingzhong Zhang, Zengxiang Tong
<b>10:00-10:30</b>	<b>Tea Break</b>
<b>10:30-11:20</b>	<b>Plenary Speech 5: Room 5: (Chair: Neil Sigmon)</b> 21550 The Importance of Adopting Evolving Technological Tools to Expand Content Knowledge to 3D-Wei-Chi Yang
<b>11:30-12:30</b>	<b>Closing Ceremony</b>
<b>12:30-13:30</b>	<b>Lunch and Farewell</b>

Note.

Auditorium: Concert Hall (1F of Building 35)

Room1 ~ Room3: Classroom 201, 202 and 203 (2F of Building 34-South Building)

Room 4: Conference Room 618 (6F of Building 34-South Building)

Room 5: International Conference Hall (4F of Building 34-North Building)

Room 6: Conference Hall (1F of Building 33)

Room 7: Computer Lab 504 (5F of Science Building II)

Room 8: Computer Lab B06 (Basement of Science Building II)

Room 9: Conference Room 409(4F of Building 34-South Building)