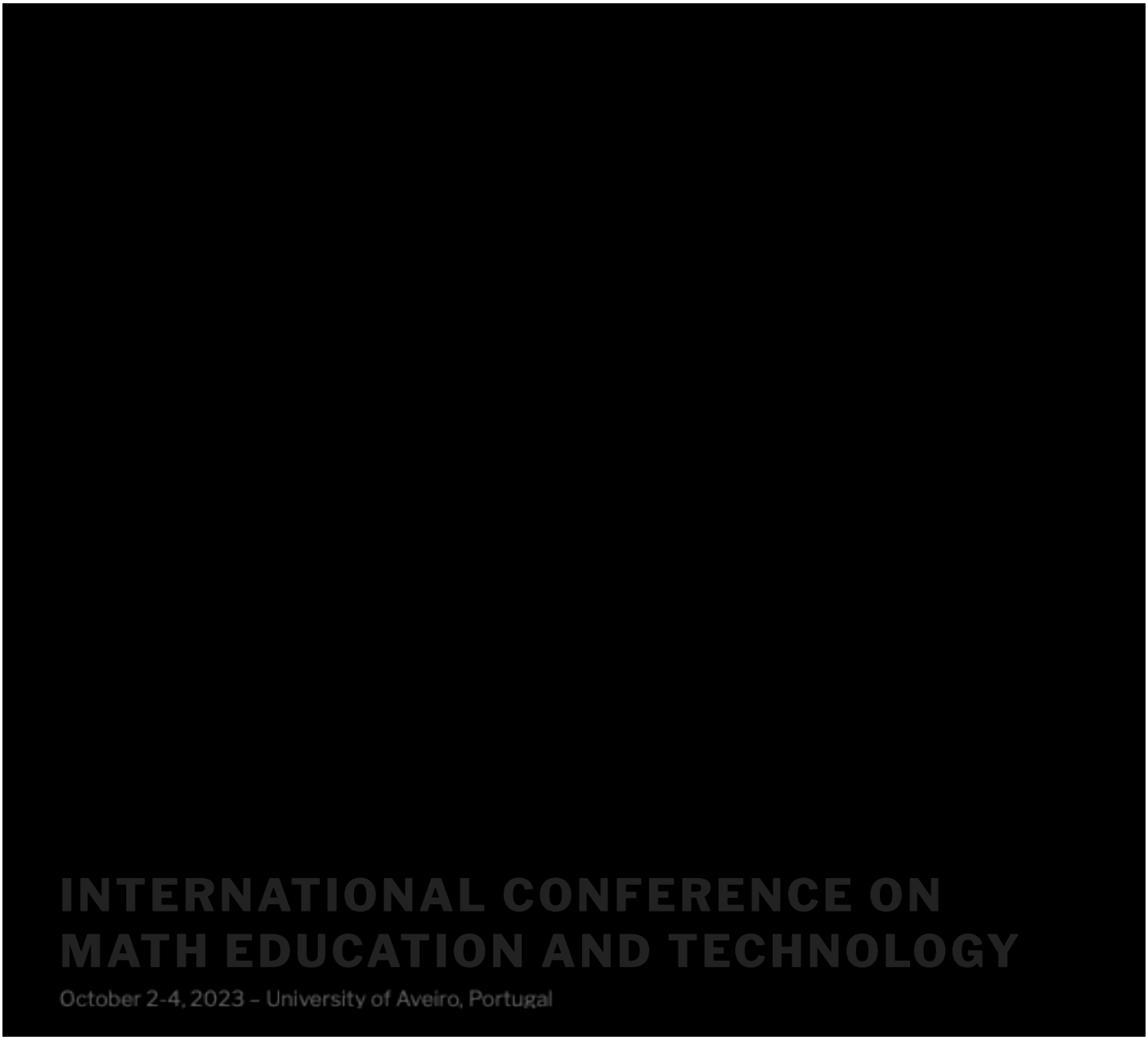


INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

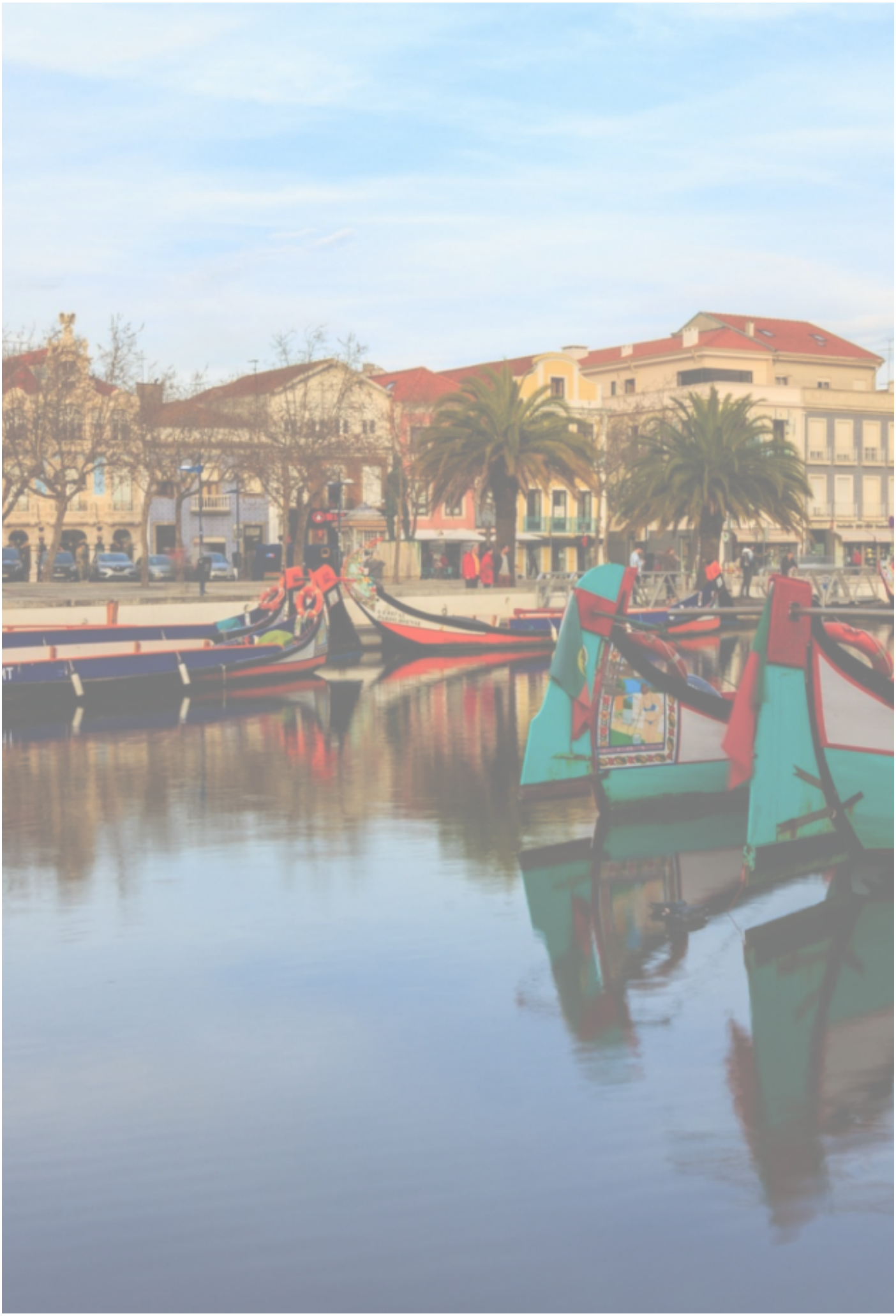
The Department of Education and Psychology and the Department of Mathematics of the University of Aveiro, Portugal, are pleased to invite you to the **1st International Conference on Math Education and Technology 2023 (ICMET 2023),** which will take place from the **2nd to the 4th of October 2023**.

ICMET 2023 is expected to bring together experts from around the world, providing opportunities for networking, reflection, and publication in the fields of Mathematics, Education and Technology.

In addition to digital tools in Mathematics education, we address related topics such as STE(A)M – Science, Technology, Engineering (Arts) and Mathematics.

The conference mobilizes researchers from various institutions of higher education, primary and secondary school teachers, professional associations of teachers, and other groups of education professionals linked to STE(A)M.

English is the official language of the conference.



INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

October 2-4, 2023 – University of Aveiro, Portugal

PLENARY SPEAKERS

Professor Dr. Wei-Chi Yang, from Radford University, USA (https://sites.radford.edu/~wyang/) founded the Asian Technology Conference in Mathematics (ATCM: http://atcm.mathandtech.org) in 1995, the Electronic Journal of Mathematics and Technology (eJMT: ejmt.mathandtech.org) and the printed version of eJMT, called the Research Journal of Mathematics and Technology (RJMT: rjmt.mathandtech.org). His research involves the computational Henstock integrations in multidimensions, and discovers mathematics by integrating Dynamic Geometry Software and Computer Algebra System.

Talk title: Inspiring creative, innovative, and computational thinking in STEM through technology

Abstract: In this talk, we will demonstrate how some rote types of exam-based university problems can be expanded to problems for undergraduates, graduates, and even researchers for further investigation. We shall see how dynamic geometric approaches can provide critical intuition and motivation to learners and make challenging problems more accessible to more students. Integration of the computer algebra system with the dynamic geometry system will not only allow us to make conjectures and discover more mathematics, but also provide us with an excellent methodology to deal with many real-life problems.

Professor Magistral Dr. Tomás Recio, from the Universidad Antonio de Nebrija, Madrid, Spain, http://www.recio.tk , has been since the decade of the 90's working on different research issues concerning mathematics education and technology from a triple perspective: algebraic geometry, dynamic geometry, computer algebra systems. Currently he is involved in the development of automated reasoning tools on GeoGebra (both in the standard, as well as in the fork version GeoGebra Discovery, https://kovzol.github.io/geogebra-discovery/) and in the consideration of their potential applications in the educational context.

Talk title: **Looking for interesting theorems in geometry**

Abstract: In our talk we will describe some on-going improvements concerning the Automated Reasoning Tools developed in GeoGebra Discovery, providing different examples of the performance of these features. In particular, we will consider the behavior of our "automated geometer", capable to automatically discover a large amount of mathematically rigorous results holding between the elements of a given geometric figure. But the output of the "automated geometer" mixes, without pointing out any difference, relevant and trivial (from a human point of view) statements. Thus, our current research interest focuses in the proposal of an algorithmic way to evaluate the relevance of a geometric theorem, allowing the "automated geometer" to highlight results that could meet human expectatives. Finally, the possible educational impact of these new technological developments, will be discussed.

Ana Breda, mathematician and Associate Professor with habilitation at the University of Aveiro, Portugal, got her Ph.D. in Geometry and Topology, in 1989. She teaches mathematics courses to future educators and mathematics teachers, and her research interests lie in computational, geometric, and algebraic aspects of surface intersections, integrating functionalities of Dynamic Geometric Software, and being equally committed to mathematics education. She is a member of the Portuguese committee of the International Commission on Mathematical Instruction (ICMI)

and the coordinator of the GEOMETRIX Thematic Line of the Center for Research and Development in Mathematics and Applications, CIDMA.

Talk title: An Approach to Integrating Dynamic Geometry Software into Mathematics Teaching and Learning

Abstract: The Geometrix Thematic Line is committed to three fundamental lines of action: carrying out research in Mathematics, Technology, and Mathematics Education; creating computational resources to support the teaching and learning of mathematics; and promoting collaborations with national and international institutions and partners to develop outreach activities centered on mathematics, art, culture, community, and university. The team behind Geometrix is made up of researchers and undergraduate and graduate students from diverse scientific fields. At Geometrix, mathematicians, computer programmers, teachers, educators, and graphic designers join forces toward a common goal: the conception and implementation of inclusive teaching and learning tools and environments, crossing all levels of education. Initially, we will provide a brief overview of the currently ongoing Geometrix projects. Later, we will focus our attention on the project aimed at creating, selecting, and exploring GeoGebra Applets, considering the official document "Novas Aprendizagens Essenciais de Matemática para o Ensino Secundário".

Andreia Oliveira Hall, PhD in Probability and Statistics in 1998, is Associate Professor at the Mathematics Department of the University of Aveiro, Portugal. Her research interests encompass extreme value theory and statistical data analysis during her earlier career and presently focus on mathematical education and mathematics and the arts. She teaches mathematics to pre-service and in-service teachers, the latter through professional development courses. She coordinates the *Mathematical Circus Project* in Aveiro which promotes the interest in mathematics through shows of mathematical magic. In 2020 she did an individual exhibition of mathematical quilts at the University of Aveiro.

Talk title: Dancing along to decimals of rational numbers

Abstract: Numbers play a fundamental role in our daily lives. Since early childhood, we learn what they are and how to represent them. Despite our familiarity with numbers, there are numerous details that often go unnoticed, much like the unnoticed details of the street where we live and pass by every day.

Rational numbers are typically represented as decimals or fractions. In decimal form, rational

numbers are either terminating or infinite repeating. The characteristics of these decimals can be deduced from the fractions that represent them, using basic number theory. For example, by examining a fraction, we can determine whether the corresponding decimal is terminating or non-terminating. This only depends on the prime factor decomposition of the denominator, provided that the fraction is irreducible. It will be terminating if there are no prime factors other than two and five.

It is often said that a picture is worth a thousand words. What if we were to convert decimals into images? By dividing a circle into ten equal parts numbered from 0 to 9, decimals can be transformed into visual paths defined by the sequence of digits. Join us and dance along to the trajectories created by decimals of rational numbers. You'll be surprised by what they have to reveal!

INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

October 2-4, 2023 – University of Aveiro, Portugal

CALL FOR PAPERS

Proposals for talks, posters and workshops will be accepted. Abstracts must have a min. 1200 characters including spaces and max. 3500 characters including spaces.

The limit of each workshop will be 1 hour.

Important Dates *
Abstract of Workshop, contributed talks and digital posters **August 30, 2023**
Acceptance notifications **September 12, 2023**
Final Full papers **November 30, 2023**

Submissions will be managed through the Microsoft CMT online system.

*One author contributions can cover a maximum of 2 abstracts. All abstracts must be submitted in English.

INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

October 2-4, 2023 – University of Aveiro, Portugal

TOPICS FOR CONTRIBUTION

The conference will focus on Education, Mathematics and Technology, but it is not restricted to these themes. Contributions on the following fields are also accepted:

- Assessment
- Creativity
- Education Management
- Teacher Education
- History of Mathematics
- Math Curriculum / Curriculum Design
- STEM/STEAM

PUBLICATION/PROCEEDINGS

- **Abstract Guideline**

  Word template: ICMET 2023 submission template

- **Publications**

  All accepted abstracts for the **International Conference on Math Education and Technology 2023** will be published in the Conference Abstract Book, edited by the UA Editora Publisher, with ISBN and DOI.

  Conference participants will get the opportunity to submit their full papers to one of the prestigious peer-reviewed journals mentioned below which are internationally accredited by renowned publishers.

  Possible Publication Avenues – Peer-Reviewed Journals

  Electronic Journal of Mathematics and Technology (selected papers – Special Issue)

  Indagatio Didatica (Special Issue)

  APEduC Journal

  Frontiers in Education

  Participants are advised to read the journal's scope and aim in advance in order to select the most suitable journal for their paper submission.

  The author's instructions and submission guidelines are in accordance with the selected journal.

  All papers will be subjected to a double-blind peer-reviewed process before acceptance.

REGISTRATION/FEES

Presential
Regular (before **September 18**) 200.00 € *
PhD Students (before **September 18**) 50.00 € **

Accompanying Person (before **September 18**) – 70€ (Includes only the Conference social program)

Online
Regular (before **September 18**) 100.00 € ***
PhD Students (before **September 18**) 25.00 € ***

*(includes 3 lunches + Coffee Break + publication of ebook of abstracts + folders + conference dinner + social program)

** (includes 3 lunches + Coffee Break + publication of ebook of abstracts + folders)

*** (includes publication of ebook of abstracts)

Refund and cancellation requests must be received directly on the conference email, before September 22, 2023. There is a 50 € service charge for refunds and cancellations. Bank taxes must be paid by the participants. Otherwise, the amount will be charged at the registration desk.

Registration can be done **here**.

For matters related to registrations, payment of registrations and invoices, please contact dep-icmet@ua.pt.

Payment only by Bank Transfer

Name of Account: Universidade de Aveiro – Eventos (VAT Number: 501 461 108)

IBAN – PT50 0035 0361 00002885330 45

SWIFT-BIC Code: CGDIPTPL

It is mandatory to send a copy of the bank transfer identified with **Conf_ICMET2023_ParticipantName** to dep-icmet@ua.pt

INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

October 2-4, 2023 – University of Aveiro, Portugal

TENTATIVE PROGRAM

You can find the detailed program here.

2 October	9h-9h30	Reception
	9h30- 10h	Opening Ceremony
	10h-11h	Plenary Speaker **Ana Breda**
	11h-11h30	Coffee Break and Poster Session
	11h30-12h30	Contributed Session
	12h30-14h30	Lunch
	14h30-16h15	Contributed Session
	16h15-16h45	Coffee Break and Poster Session
	16h45-17h45	Workshop
	17h45-18h15	Welcome Reception
3 October	10h-11h	Plenary Speaker **Wei-Chi Yang**
	11h-11h30	Coffee Break and Poster Session

	11h30-12h30	Plenary Speaker **Andreia Hall**
	12h30-14h30	Lunch
	14h30-18h	Social Programme
	19h30	Gala Dinner

4 October	10h-11h	Contributed Session
	11h-11h30	Coffee Break and Poster Session
	11h30-12h30	Plenary Speaker **Tomás Recio** (online)
	12h30-14h30	Lunch
	14h30-16h	Contributed Session
	16h- 16h15	Coffee Break and Poster Session
	16h15-16h45	Contributed Session
	16h45-17h	Closing Cerimony

INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

October 2-4, 2023 – University of Aveiro, Portugal

ORGANIZING COMMITTEE

Isabel Cabrita

Luís Descalço

Margarida M. Pinheiro

Nuno Bastos

Paula Carvalho

Paula Oliveira

Teresa B. Neto

Vanda Santos

INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

October 2-4, 2023 – University of Aveiro, Portugal

SCIENTIFIC COMMITEE

- Augusto Rasga (Higher Institute of Education Sciences, Angola)
- Álvaro Nolla de Celis (Autonomous University of Madrid, Spain)
- Ana Paula Aires (University of Trás-os-Montes and Alto Douro, Portugal)
- António Domingos (NOVA School of Science and Technology of Lisbon, Portugal)
- António Ribeiro (Polytechnic Institute of Viseu, Portugal)
- Bernardo Filipe Matias (Higher Institute of Education Sciences, Angola)
- Carlos Albuquerque (University of Lisbon, Portugal)
- Cristina Caridade (Polytechnic Institute of Coimbra, Portugal)
- Dina dos Santos Tavares (Polytechnic Institute of Leiria, Portugal)
- Fátima Regina Jorge (Polytechnic Institute of Castelo Branco, Portugal)
- Francisco Botana (University of Vigo, Spain)
- Gilles Aldon (French Institute of Education, France)
- Helena Campos (University of Trás-os-Montes and Alto Douro, Portugal)
- Isabel Cabrita (University of Aveiro, Portugal)
- Isabel Vale (Polytechnic Institute of Viana do Castelo, Portugal)
- Jaime Carvalho e Silva (University of Coimbra, Portugal).
- Ján Gunčaga (Faculty of Education, Comenius University in Bratislava, Slovakia)
- Joana Teles (University of Coimbra, Portugal)
- Luís Descalço (University of Aveiro, Portugal)
- Margarida M. Pinheiro (University of Aveiro, Portugal)
- M. Pilar Vélez (Universidad Nebrija, Spain)
- Maria Cecília Costa (University of Trás-os-Montes and Alto Douro, Portugal)
- Maria Manuel Nascimento (University of Trás-os-Montes and Alto Douro, Portugal)

- Mariotti Maria Alessandra (University of Siena, Italy)
- Mirosława Sajka (Pedagogical University of Krakow, Poland)
- Nuno Bastos (Polytechnic Institute of Viseu, Portugal)
- Patrícia Silva (Federal University of Rio Grande do Sul, Brasil)
- Paula Carvalho (University of Aveiro, Portugal)
- Paula Oliveira (University of Aveiro, Portugal)
- Pedro Manuel Baptista Palhares (University of Minho, Portugal)
- Pedro Quaresma (University of Coimbra, Portugal)
- Philippe Richard (University of Montréal, Canada)
- Thierry Dana-Picard (Jerusalem College of Technology, Israel)
- Tiago Emanuel Klübler (State University of Western Paraná, Brasil)
- Vanda Santos (University of Aveiro, Portugal)
- Zoltán Kovács (Eszterházy Károly Catholic University, Hungary)
- Zoltán Kovács (Johannes Kepler University, Austria)

INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

October 2-4, 2023 – University of Aveiro, Portugal

INFORMATIONS

Conference email: dep-icmet@ua.pt

Where?

Department of Education and Psychology

Department of Mathematics

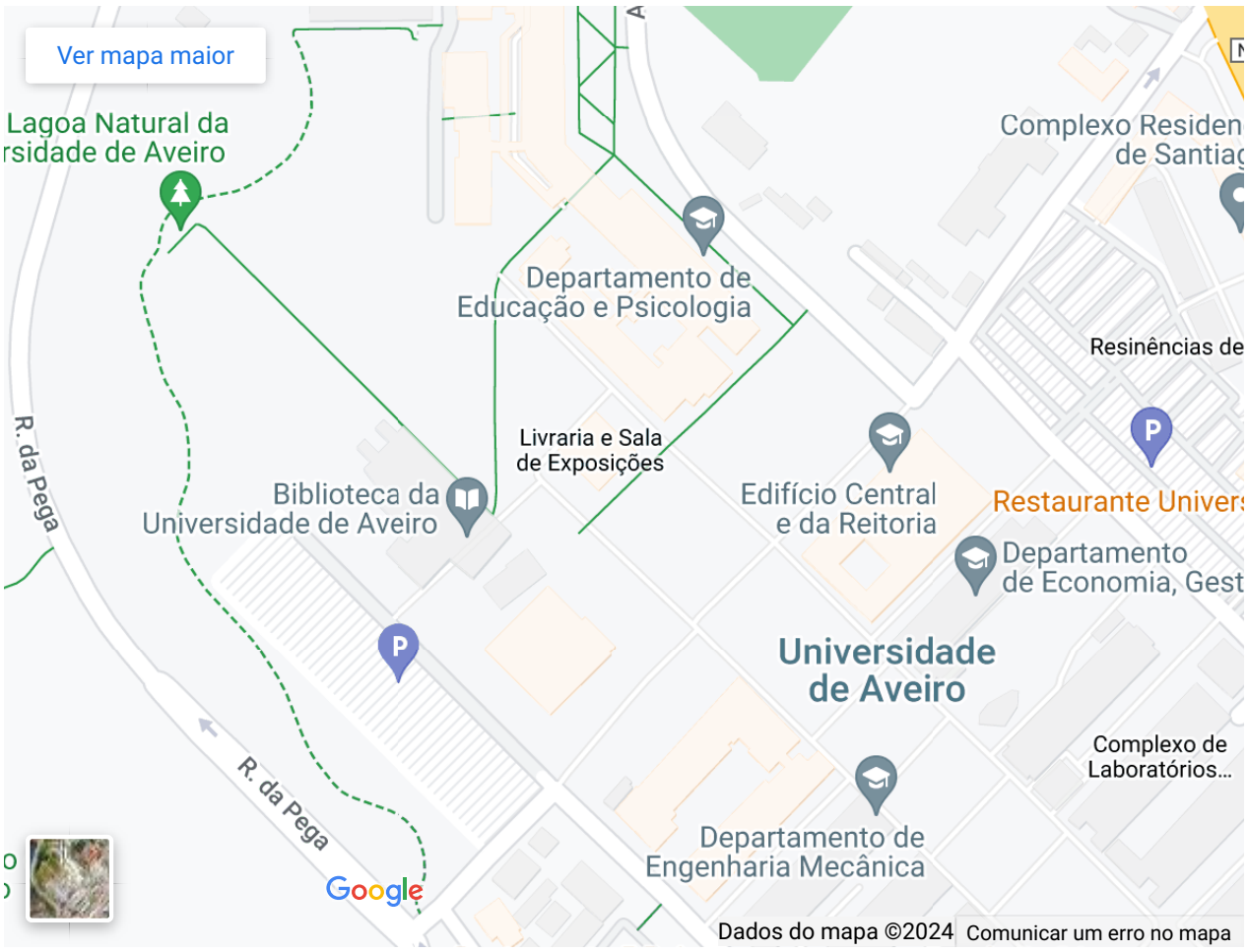
University of Aveiro

Campus Universitário de Santiago,

3810-193 Aveiro, Portugal

GPS 40°37’53”N 8°39’27”W

Map



How to get there

By Plane (to Lisbon or Porto)

The international airports are *Airport of Porto* (at about 70 km, north of Aveiro) and *Airport of Lisbon* (at about 250 km, south of Aveiro). Both airports have regular scheduled flights to and from all main European destinations as well as major world cities [see more...].

By Train

From Lisbon to Aveiro:

There are comfortable trains arriving hourly from the *Lisboa-Oriente* station

(you can arrive there from the airport by metro, bus or taxi) to *Aveiro* The journey takes about 2 hours and 20 minutes [see more…].

Lisbon Airport –metro/bus/taxi–> Lisboa Oriente –train–> Aveiro

From Porto to Aveiro:

There are comfortable trains arriving hourly from *Porto-Campanhã* station (you can get there from the airport by bus, taxi or metro – use the direct violet metro line from the *Airport of Porto*) to *Aveiro*. The journey takes about 1 hour [see more…].

Porto Airport –metro/bus/taxi–> Porto-Campanhã –train–> Aveiro

By Bus

There are express buses arriving every hour both from Lisbon and Porto [see more…].

By Car

The main motorways passing through Aveiro are: highway A1, A29, A25. After arrival, search for directions indicating "Universidade". These will drive you into the main university campus. [see more…].

Visa Requirements

Portugal is in the Schengen area, some foreigners need an entry visa. If you do need it, please make sure you apply for it well in advance before your departure. In the Schengen area you may travel freely between member countries. However, we recommend that you access the SEF (Serviço de Estrangeiros e Fronteiras) website and Portal das Comunidades Portuguesas.

Accommodation

Hotels in the city of Aveiro are within walking distance from the venue.

The prices and conditions should be confirmed with the hotel. In order to benefit the indicated prices, you should contact directly the hotel and mention the conference. We advise the following hotels:

Hotel Afonso V (Discount – 10% on bookings made directly with the hotel via email and mentioning the event)

Hotel As Americas (code “ICMET2023”; Standard single room: 80€/night; Standard double/twin room: 100€/night; Standard triple room: 130€; Suite: 150€)

Hotel Aveiro Center (code “ICMET2023”; Standard single room: 70€/night; Standard double room: 80€/night)

Hotel Jardim (code “ICMET2023”; Double/Twin Room Single Use – 52€/night; Double/Twin Room (2 People) – 73€/night; Breakfast Included)

Hotel Moliceiro (code “ICMET2023”; Standard single room: 105€/night; Standard double room: 130€/night)

Hotel Salinas (code “ICMET2023”; Standard single room: 80€/night; Standard double room: 73€/night; single studio: 75€/night; Twin Studio: 90€/night)

Meliá Ria Hotel (code “ICMET2023”; Standard single room: 91€/night; Standard double/twin room (2 beds): 106€/night)

INTERNATIONAL CONFERENCE ON MATH EDUCATION AND TECHNOLOGY

October 2-4, 2023 – University of Aveiro, Portugal

SPONSORS & SUPPORTERS

fct Fundação para a Ciência e a Tecnologia

cidtff centro de investigação Didática e Tecnologia na Formação de Formadores

CIDMA

universidade de aveiro

dep universidade de aveiro departamento de educação e psicologia

dmat universidade de aveiro