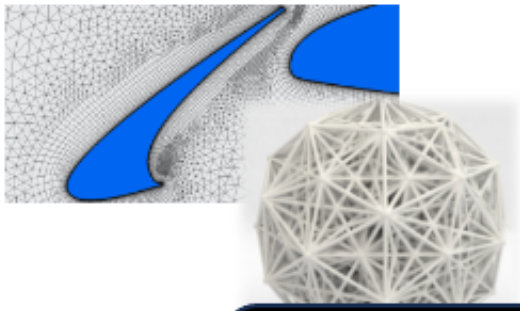
ICTMA22

LiU LINKÖPING UNIVERSITY 11-15 August 2025

The 22nd International Conference on Teaching of Mathematical Modelling and Applications (ICTMA22)



Second announcement

ICTMA22@mai.liu.se

https://liu.se/en/research/ictma22

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Welcome to ICTMA22 in Linköping!

In 1989 the fourth International Conference on Teaching of Mathematical Modelling and Application (ICTMA4) was arranged in Roskilde in Denmark. For ICTMA22 in 2025 we extend an invitation to all researchers, teachers and mathematicians interested in the teaching and learning of mathematical modelling and applications to return to Scandinavia again – but this time to Sweden and the city of Linköping!

About ICTMA

The International Community of Teachers of Mathematical Modelling and Applications (the 'Community') is a membership organisation that exists to promote Applications and Modelling in all areas of mathematics education - primary and secondary schools, colleges and universities. The ICTMA conferences began in the first half of the 1980s and have been held more or less every other year since then:

ICTMA-1	1983	University of Exeter, England
ICTMA-2	1985	University of Exeter, England
ICTMA-3	1987	University of Kassel, Germany
ICTMA-4	1989	University of Roskilde, Denmark
ICTMA-5	1991	Freudenthal Institute, Netherlands
ICTMA-6	1993	University of Delaware, USA
ICTMA-7	1995	University of Ulster, Northern Ireland
ICTMA-8	1997	University of Queensland, Australia
ICTMA-9	1999	University of Lisbon, Portugal
ICTMA-10	2001	Tsinghua University, Beijing, China
ICTMA-11	2003	Marquette University, Milwaukee, USA
ICTMA-12	2005	City University, London, UK
ICTMA-13	2007	Indiana University, USA Kathmandu University, Nepal (Satellite Meeting)
ICTMA-14	2009	University of Hamburg, Germany
ICTMA-15	2011	Australian Catholic University, Australia
ICTMA-16	2013	Universidade Regional De Blumenau, SC, Brazil
ICTMA-17	2015	University of Nottingham, U.K.
ICTMA-18	2017	University of Stellenbosch, Cape Town, South Africa
ICTMA-19	2019	University of Hong Kong, Hong Kong
ICTMA-20	2022	University of Würzburg, Germany
ICTMA-21	2023	Yokohama National University, Japan

Learn more about the history of ICTMA here: *ICTMA, the first century*.

Read more about ICTMA here: *https://www.ictma.net*.

Conference Theme for ICTMA22 – *Challenges and opportunities for mathematical modelling education*

In general, we welcome contributions to ICTMA22 that include, but are not limited to, theoretical, empirical, philosophical, and methodological topics related to the promotion, teaching, learning, and evaluation of mathematical modelling and application, such as the following:

- Pre-primary, primary and secondary school education
- Teacher and university education
- Technology, simulations and modelling
- Design of task, activities and courses focusing on modelling and applications
- Modelling competences
- Modelling assessment
- Problem-posing in modelling
- Creativity in modelling
- Modelling in STEM education and in other interdisciplinary settings
- Modelling in the 21st century
- Modelling in and for everyday life, work, and planet earth
- Modelling teaching and learning in the age of artificial intelligence

In an educational setting, challenges for mathematical modelling education offer us as researchers and teachers of mathematical modelling education, opportunities to reflect, to use creativity and to find new pathways for the future, not only for our students, teachers and for conducting research, but also for society at large. Challenges are opportunities, and as Winston Churchill famously put it: *"Never let a good crisis go to waste."*. That is, challenges present opportunities to reflect upon, to be used creatively, and to find new perspectives and pathways to advance, learn and develop from.

For ICTMA22 we especially encourage participants and speakers to shed their light on the theme *challenges and opportunities in mathematical modelling education*, such as

- Challenges and Opportunities for implementing mathematical modelling in schools and curricula
- Challenges and Opportunities for mathematical modelling competitions
- Challenges and Opportunities for mathematical modelling education for our environment and planet earth
- Challenges and Opportunities for assessment of mathematical modelling
- Challenges and Opportunities for ethics in mathematical modelling
- Challenges and Opportunities for mathematical modelling education and digital tools
- Challenges and Opportunities for mathematical modelling in primary education
- Challenges and Opportunities for theorizing the teaching and learning of mathematical modelling
- Challenges and Opportunities for teaching and learning of mathematical modelling in the age of artificial intelligence

Conference organization

Local Organization Committee (LOC)

- Jonas Bergman Ärlebäck (Chair)
- Peter Frejd (co-chair)
- Madeleine Engström
- Malin Aurell
- Karin Johansson
- Ulrika Johansson
- Sara Julsgård
- Sara Läthén

Important dates at a glance – submission and registration schedule

15th January	**One page** abstract submission opens Registration opens
15th April	Abstract submission ends
1st May	Acceptance/rejection of abstracts Review feedback to Authors
1st June	Deadline for resubmission of abstracts
15th June	Regular registration closes
10th August	Early career day
11th August	Conference Start

On request delegates can get an invitation to the conference from January 15th
If such an invitation is needed, please email your request to ICTMA22@mai.liu.se

Scientific Program

The ICMTA22 conference includes many types of scientific activities: keynote and plenary lectures, a panel discussion, long- and short oral communications in parallel sessions, and a poster session. In addition, it includes a new format called *Reflection fika*.

Keynote, plenaries and panel discussion

The scientific program comprises one (1) keynote lecture and four (4) 45-minute long plenary lectures by invited speakers to be followed by a 15-minute discussion. The keynote will be given by **Professor Gabriele Kaiser** (University of Hamburg, Germany; Nord University, Bodø, Norway), and the plenaries by **Professor Kimmo Ericsson** (Mälardalen University College, Sweden), **Professor Daniel Orey** (Federal University of Ouro Preto, Brazil) and **Associate Professor Serife Sevinc** (Middle East Technical University, Turkey; TU. Dresden, Germany). A fourth dual plenary on the topic *AI and mathematical modelling education – challenges and opportunities* will be given jointly by **Senior Lecture Kerri Spooner** (Auckland University of Technology, New Zealand) and **Associate Professor Takashi Kawakami** (Utsunomiya University, Japan).

A panel discussion moderated by **Professor Pauline Vos** (Western Norway University of Applied Sciences, Norway) approximately 45 minutes, followed by a 30-minute discussion, on the topic will commend. The participating panellists are: **Professor Marcelo C. Borba** (State University of São Paulo, Brazil), **Professor Vince Geiger** (Australian Catholic University, Australian), **Associate Professor Britta Eyrich Jessen** (University of Copenhagen, Denmark), **Professor Hans-Stefan Siller** (Universität Würzburg, Germany).

Long or Short Oral Communications

Long oral communications (30 minutes + 15 minutes discussion) or short oral communications (20 minutes + 10 minutes discussion) will be organised in six parallel sessions at ICTMA22. Oral communications can be empirical, theoretical, philosophical or methodological. They may be based on ongoing or completed research.

Reflection fika

Fika (https://en.wikipedia.org/wiki/Coffee_culture#Sweden) is important in Sweden and to Swedes. Therefore, the ICTMA22 programme will include so-called *Reflection Fika* to take advantage of this uniquely Swedish version of a coffee and cake break on two afternoons of the conference. A comfortable seating area will provide a relaxed and open setting in which everyone can reflect on the day in conversation. Under the informal guidance of a moderator, senior researchers, including **Professor Mogens Niss** (Roskilde University, Denmark), will share their impressions and reflections on the day's sessions and put these reflections into different perspectives. The floor will then be open to the audience, who can ask questions, expand on their reflections, dream, criticise or just watch. A reflection fika is meant to feed our minds and stomachs. A similar interactive academic format was implemented at PME Umeå (2018) and was very well received.

Poster session

The conference program comprises a designated slot for poster presentations.

Early career researcher day

The day before the official scientific program of ICTMA22 will start, **on Sunday August 10**, **12.00-16.30**, a special activity for early career researchers will be offered. All early career researchers and PhD students who are attending ICTMA22 are welcome to participate in this day for a fee of **350 SEK** (about **30 Euros**), covering the cost for lunch, coffee breaks and refreshments during the day. The program will be organized and coordinated by Pauline Vos in collaboration with the LOC, with the aim to provide early career researchers with opportunities to develop their research competencies in various areas of modelling education, discuss their research, probe theoretical and methodological issues, establish new contacts, build networks among themselves and interact with a few experienced researchers in the field. The day starts with lunch at 12.00, and the academic program starts at 13.00. The Early career researcher will be help in the facilities of the Mathematics Department at Valla Campus of Linköping University (same campus as the conference venue).

Schematic overview of the conference schedule

Time	Sunday Aug 10			Monday Aug 11	Tuesday Aug 12	Wednesday Aug 13	Thursday Aug 14	Friday Aug 15
08:30				Registration 08:00-09:00				
09:00				Opening ceremony	Plenary 1	Plenary 3	Plenary 4	Plenary Panel
09:30								
10:00				Coffee break	Coffee break	Coffee break	Coffee break	
10:30				Keynote Speech	Parallel session 3	Parallel session 4	Parallel session 5	Coffee break
11:00								Henry Pollak award ceremony and closing ceremony
11:30								
12:00	Early Carrer Lunch			Lunch	Lunch	Lunch	Lunch	
12:30								Lunch
13:00	Early Career Researcher Day	Registra-tion				Excursion		
13:30			ICTMA Executive Board meeting	Parallel session 1	Plenary 2		Parallel session 6	
14:00								
14:30				Coffee break	Reflection of the day (FIKA)			
15:00							Reflection of the day (FIKA)	
15:30				Parallel session 2				
16:00					Poster session			
16:30							Business meeting	
17:00								
17:30								
18:00	Welcome reception 18:00-20:00 Vallfarten, Campus Valla							
18:30							Conference dinner 19:00-	
19:00								

Presentation of keynote- and plenary speakers and panellists

Keynote speaker Gabriele Kaiser holds a master's degree as a teacher for mathematics and humanities for lower and upper secondary level. She completed her doctorate in mathematics education in 1986 with a study on applications and modelling supervised by Werner Blum. The thesis war covering theoretical aspects such as an analysis of the historical and the recent discussion on applications and modelling as well as empirical aspects, namely the possibilities of this kind of examples in mathematics teaching. These research works were extended in new projects on modelling in mathematics teaching together, amongst others with colleagues from the mathematics department.

International comparison in mathematics teaching is one of the main fields of research of Gabriele Kaiser and therefore became the subject of her post-doctoral study, which comprised a comparative study on mathematics teaching in England and Germany.

Since 1998, she is full professor for mathematics education at the Faculty of Education of the University of Hamburg. Her areas of research are empirical studies on teacher education and teachers' professionalism, modelling and applications in school, international comparative studies, gender and cultural aspects in mathematics education. She was convenor of the 13th International Congress on Mathematical Education, which took place in Hamburg in 2016 with more than 3500 participants. Forty books have come out in the frame of this congress edited by her.

Gabriele Kaiser's most recent projects deal with teacher education, partly under an international perspective starting from the IEA Teacher Education Study in Mathematics (TEDS-M) on the efficiency of teacher education in various countries at primary and secondary level. Several follow-up studies – with Sigrid Blömeke and Johannes König – have been carried out in the frame of longitudinal studies and studies integrating knowledge and teacher noticing. A most recent study focuses on inclusive mathematics education and teacher professionalism

Gabriele Kaiser has been directing the large-scale project ProfaLe "Professional Teacher Action for Promoting Subject-based Learning under Changing Societal Conditions" within the framework of the „Quality Campaign for Teacher Education", which has focused amongst other the integration of subject teaching and teaching of mathematics education, the integration of the perspective of inclusion and language within teacher education. The project lasted from 2015 to 2023.

From 2005 to 2024 she has been the editor-in-chief of the high-ranking journal ZDM –Mathematics Education, which is since 2020 in SSCI. From 2025 onwards, she serves as associate editor. In addition, she is editing several book series at national and international level amongst others International Perspectives on Mathematical Modelling. From 2007 to 2011 and from 2019 to 2023 she has been president of the ICMI affiliate group "The International Community of Teachers of Mathematical Modelling and Applications" (ICTMA). From 2017 to 2021 she was a professorial fellow at the Institute for Leaning Sciences and Teacher Education at the Australian Catholic University in Brisbane (Australia), where she holds currently an honorary professorship. In addition, she holds an honorary professorship at the Educational University Hong Kong. Furthermore, since 2022 she serves as professor II at Nord University in Bodø (Norway).

Plenary speaker Kimmo Eriksson is a professor of mathematics at Mälardalen University, Sweden, and a researcher at the Institute for Futures Studies. He is also the chairperson of the Global Social Norms research network (globalsocialnorms.org). Kimmo received his PhD degree in mathematics from the Royal Institute of Technology in 1993, starting his academic career as an algebraic combinatorialist. He later branched out into game theory, mathematical statistics, cultural evolution, social psychology, sociology, and mathematics education, and in 2018 he obtained a second PhD degree in social psychology from University of Kent. In his mathematics education research he has mainly analyzed data from TIMSS and PISA, often focusing on how within-country differences (e.g., by gender or socioeconomic status) vary between countries. His main current research interest is to understand how and why moral opinions and social norms vary across space and time, using cross-national surveys and mathematical models of cultural evolution.

Plenary speaker Daniel Clark Orey, Ph.D. is Professor Emeritus of Mathematics and Multicultural Education at California State University, Sacramento.

He has taught and lived in Oregon, Brazil, Guatemala, Mexico, Nepal and the United States.

He is a Fulbright Senior specialist with experiences at the Pontifical Catholic University of Campinas in Brazil (1998) and at Kathmandu University in Nepal (2007).

He is currently professor of mathematics education in the Department of Mathematics Education and serves in the Post-Doctoral Academic Masters and Doctoral Program in Mathematics Education at the Universidade Federal de Ouro Preto, Brazil.

Plenary speaker Serife Sevinc (Şerife Sevinç; in her native language) is a mathematics education researcher and teacher educator who has worked at universities in Germany, Turkey, and the United States. She is currently an Associate Professor of Mathematics Education at Middle East Technical University, Türkiye, and a Postdoctoral Research Associate in the Department of Primary Education/Mathematics Education at Technische Universität Dresden (TU Dresden), Germany.

Dr. Sevinç earned her Ph.D. in Curriculum and Instruction with a specialization in Mathematics Education, as well as a minor Ph.D. in Inquiry Methodology, from Indiana University Bloomington, U.S.A. Her doctoral research, supervised by Prof. Richard Lesh, focused on the nature of pre-service teachers' knowledge in designing modeling problems and pre-service teachers' conceptions of problem characteristics that facilitate the modeling process. Through this work, she has made significant contributions to the field of mathematics education, publishing theoretical and empirical studies in prestigious international journals. Additionally, she has served as a reviewer for several leading mathematics education journals.

Her research interests center on students' and pre-service teachers' mathematical thinking in problem-solving and problem-posing processes, with a particular focus on mathematical modeling. She continues to investigate how the modeling process enhances students' and teachers' conceptual understanding of mathematics, as well as the knowledge required by pre-service teachers to design modeling problems. Her involvement in several international projects has enabled her to collaborate with esteemed colleagues in the U.S.A. and Europe. These projects range from exploring young students' experiences with mathematical modeling to examining cognitive and intercultural aspects of the modeling process among prospective mathematics teachers, contributing to cutting-edge advancements in the field.

In recent years, Dr. Sevinç has been an active member of the ICTMA (International Community of Teachers of Mathematical Modelling and Applications) community, regularly participating in its conferences and contributing to the ICTMA series books by publishing chapters, each highlighting significant aspects of mathematical modeling. She is also an active participant in the CERME (Congress of European Research in Mathematics Education) community, attending conferences, publishing in the CERME Proceedings, and serving as a co-leader of TWG6: Applications and Modelling at CERME14.

Beyond her research and academic contributions, Dr. Sevinç is deeply committed to advancing the field of mathematics education, particularly the modeling community. She achieves this through publishing research reports, practitioner articles, book chapters, and conference proceedings; organizing teacher training workshops; designing mathematical modeling courses for prospective teachers; and supervising master's theses and doctoral dissertations.

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Dual plenary speaker Takashi Kawakami is an Associate Professor of Mathematics Education at the Cooperative Faculty of Education, Utsunomiya University, Japan.

Born in 1983, the same year as ICTMA-1, he began his teaching career as a private primary school teacher after earning a master's degree in Education from Chiba University (Japan) in 2008. In 2013, he transitioned to academic research as a full-time lecturer at Nishikyushu University (Japan), where he contributed to the training of kindergarten and primary school teachers and conducted research on mathematics and statistics education. Since 2017, he has imparted mathematics and statistics education to primary and secondary mathematics teachers at the Utsunomiya University. In 2023, he earned a Ph.D. in Education from Hyogo University of Teacher Education (Japan).

Takashi Kawakami's research interests include mathematical modelling, statistics and data science education, STEM education, and mathematics teachers' professional learning. His research began with mathematical modelling education in primary and secondary schools, which was the subject of his master's thesis. His current primary focus is exploring the intersection of mathematical modelling and statistics/data science education using conceptual and empirical approaches.

In terms of the conceptual approach, he has been systematically reviewing the research literature on data-based modelling in statistics and mathematics education with Jonas Bergman Ärlebäck. In terms of the empirical approach, Takashi Kawakami's doctoral thesis explored primary and secondary school students' flexible use of mathematical/deterministic and statistical/stochastic reasoning to make informed predictions and decisions when modelling data-rich situations. More recently, in collaboration with Akihiko Saeki and other colleagues, Takashi Kawakami extended this work to initiatives that promote data-informed interdisciplinary modelling as a part of STEM education and data-informed sociocritical modelling as a component of citizen education.

Takashi Kawakami's research was supported by grants from the Japan Society for the Promotion of Science and the CASIO Science Promotion Foundation. He has received several awards, both in Japan and overseas, including the Highly Commended Award for an Early Career Researcher at the 10th International Conference on Teaching Statistics (ICOTS-10) in 2018, the Excellent Paper Award from the Japan Society for Science Education, the Excellent Paper Award from the Mathematics Education Society of Japan, and the Utsunomiya University President's Special Award.

Takashi Kawakami has contributed to international and national academic conferences. He has been actively involved in ICTMA conferences since 2013. He served on the Local Organising Committee for ICTMA-21 in Japan. He participated in the Survey Team "Statistics and Data Science Education as a Vehicle for Empowering Citizens" at ICME-15 in 2024. He reviewed the common discourse between research on mathematical modelling education and statistics/data science education. Since 2014, Takashi Kawakami has served as an organiser or co-organiser of thematic sessions on mathematical modelling education at the annual conference of the Japan Society for Science Education (JSSE). He is currently a board member of the JSSE and the guest editor-in-chief of a special issue of a JSSE journal focused on data science education.

Dual plenary speaker Dr. Kerri Spooner is a senior lecturer in the Department of Mathematical Sciences at Auckland University of Technology (AUT), New Zealand. Her academic journey is marked by her dedication to mathematics education. She holds a Doctoral degree in Tertiary Mathematical Modelling Education from AUT and a Master's degree in Secondary School Mathematical Modelling Education from the University of Auckland.

Kerri's journey into mathematical modelling began in 2002 when she attended her first Mathematics in Industry Study Group (MISG) while working as a secondary school mathematics teacher. This experience sparked her interest in mathematical modelling and led her to participate in several MISGs and Mathematics in Industry New Zealand (MINZ) workshops. Kerri further developed her modelling skills by completing two tertiary modelling courses. These courses deepened her understanding of the mathematical modelling cycle and differential equations, equipping her with the skills to create mathematical models for various situations.

In 2011, Kerri worked as part of a professional mathematical modelling team. This experience, along with her participation in MISGs and MINZs, and her study in modelling, provided her with first-hand knowledge of professional modelling behaviours and their complexities. This awareness influences her teaching approach, aiming to create authentic and engaging modelling experiences for her students.

Kerri's experiences with mathematical modelling, as well as her experiences as a secondary school teacher and tertiary lecturer, made her aware of the challenges students can face when modelling. She emphasizes the importance of being open to new contexts and ideas, learning new mathematics, and working collaboratively. She uses insights from her own experiences of modelling to inform her teaching and research, always striving to be open to new modelling behaviours presented by her students.

In 2012, encouraged by research showing that students as young as 13 could engage in modelling, Kerri developed and taught a holistic mathematical modelling unit for her secondary class. She aimed to provide students with an authentic experience of mathematical modelling, allowing them to engage fully with the process. She believes in the importance of students having an authentic experience of modelling that reflects professional practices. She emphasizes students' active engagement in the modelling process, the benefits of group work, mimicking professional modelling teams, and using prompts to facilitate a successful holistic modelling experience. Kerri's ideal way of teaching modelling involves taking genuine real-world problems and having students attempt to model them. However, she has also found students can also have valuable learning experiences modelling fictional situations.

As part of her dedication to providing students with experiences of modelling, since 2016 Kerri has overseen the New Zealand section of the International Mathematical Modelling Competition (IMMC). In 2019 and 2022 New Zealand teams have been outstanding award winners.

Throughout her career, Kerri has been recognized for her excellence in teaching, winning five teaching awards and being nominated for a national teaching excellence award. She is known for promoting active learning and student collaboration to engage students with course content and learning material. Her keen interest in successful ways to engage students in their learning drives her to attempt to create learning experiences that are authentic, engaging, and accessible.

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Panel chair Pauline Vos, PhD (2002), is a Professor of Mathematics Education at the Western Norway University of Applied Sciences (HVL), in the city of Bergen.

She leads theoretical research into the why, when and how of using/learning what type of mathematics by which students/users, and practical research into the design of learning trajectories that deviate from deductive, teacher-centered approaches.

She builds on earlier experiences as mathematics teacher and teacher educator in The Netherlands, Zimbabwe and Moçambique. She has contributed to many past ICTMA conferences from ICTMA12 in London (2005) onwards.

To complementing her interest in mathematical modeling, she also has an interest in mathematical literacy and vocational mathematics.

Within the Congress of the European Society for Research in Mathematics Education, she leads the Thematic Working Group "Mathematics Education for Work, Society and Personal Development".

Panelist speaker Marcelo C. Borba is a Professor of the Graduate Program in Mathematics Education and of the Mathematics Department at UNESP (State University of São Paulo) in Brazil, where he chairs the research group GPIMEM (Research Group of Informatics, other Media and Mathematics Education).

Marcelo researches the use of digital technology in mathematics education, mathematical video produced by teachers and students, online distance education, modeling as a pedagogical approach, videos and ethnomatematics and qualitative research methodology.

He was an Associate Editor of ZDM, The International Journal of Mathematics Education between 2011 and 2023 and he was, from 2018 to 2022, the chair of the Teaching Committee of CAPES, a funding agency of the National Ministry of Education in Brazil. He is currently leading a project of CAPES-PrInt that promotes internationalization of research in technology in mathematics education in Brazil.

He was a Keynote speaker at PME-44 (Psychology of Mathematics Education Study Group), Thailand-Virtual (2020); at Plenary Panel of ICME 14 (International Congress of Mathematics Education), held in a hybrid format in China (2021); and at ICM-22 (International Congress of Mathematicians), which was originally scheduled to take place in Russia but was held virtually (2022).

He published around 20 books in English, Portuguese and Spanish, and more than a hundred papers in these three languages. Maybe more importantly, he is actively involved in planting trees within reforestation projects!

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Panelist speaker Professor Vince Geiger is the Research Director of the STEM in Education Program in the Institute of Learning Science and Teacher Education at Australian Catholic University. His work is situated in an interdisciplinary research space focused on the enabling and transformative role of mathematics within the STEM disciplines and other areas across the curriculum. This work, including over 150 peer reviewed publications, is driven by an understanding that the capacity to know and use mathematics confidently when addressing real-world problems is key to the empowerment of critically informed citizenship – the foundation for personal well-being and cohesive socially just societies. His contributions to research in STEM education are motivated by an awareness that capability in this space is vital for an individual's career prospects and the prosperity of nations.

Vince's research interests include mathematical modelling education, critical mathematical thinking, numeracy, and the role of digital resources in supporting mathematical teaching and learning. His research has attracted over $7 million (AUD) in research funding both nationally and internationally and includes the projects: Enabling students' critical mathematical thinking (Australian Research Council); Using mathematics to solve real world problems – The role of enablers (Australian Research Council), Principals as STEM Leaders (Department of Education and Training), Strengthening teachers' instructional capabilities with Big Data (Australian Universities-German DAAD Joint Research Cooperation Scheme).

Most recently he is contributing to the DASME (Data Science in Mathematics Education) project, funded by the Novo Nordisk Foundation and led by Associate Professor Britta Jessen at the University of Copenhagen.

Vince's research awards include the role of Giovani Prodi Professor at the University of Wurzburg and a Mathematics Education Research of Australasia (MERGA) Research Award. He is the current President of the International Community of Teachers of Mathematics and Applications, a Past President of the Australian Association of Mathematics Teachers, Editor-in-Chief of Mathematics Education Research Journal (Scopus med% 8); Editorial Board Member for the International Journal of Science and Mathematics Education, member of the Numeracy Expert Group for the 2nd Cycle of the Programme for International Assessment of Adult Competencies, and a member of the International Organising Committee for the International Commission for Mathematics Instruction Study-27 on mathematics education and the socio-ecological.

Panelist speaker Britta Eyrich Jessen is an associate professor at University of Copenhagen. Her research concerns mathematical modelling, digital technologies in modelling education, interdisciplinarity and curriculum analyses linked to modelling application. Lately her research interests have moved towards statistical modelling and data science, and she plans to explore potential mergers between those domains. For this purpose, she has secured funding for the research project DASME – Data Science in Mathematics Education running July 2025 - December 2028.

Most often she works with tools and notions from the Anthropological Theory of the Didactics such as Study and Research Paths, as well as Herbartian schema. This allows her to focus on practices and reasoning linked to students' engagement with modelling activities.

Her work mainly focuses on upper secondary education, and professional development of teachers at this level through lesson study and similar activities. She teaches and supervises pre-service and in-service teachers and is responsible for a course on "the mathematically modelling science" at the masters' program on STEM education. She is a co-leader of the TWG06 on modelling and application at CERME.

Before her research carrier, she was an upper secondary teacher in mathematics and physics.

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Panelist speaker Hans-Stefan Siller is a full professor at the Chair of Mathematics V – Didactics of Mathematics at the Julius Maximilian University of Würzburg. As a professor of didactics of mathematics, his remit encompasses the didactics of the subject of mathematics in all teaching positions, (vocational) grammar schools, secondary modern schools, middle schools, primary schools and schools with special educational needs. His research and work is focused at the interface of current research in mathematics didactics, conception and mathematical topics; in recent years increasingly at the interface of mathematics, MINT, education for sustainable development, digitalization and in research on giftedness.

Following his studies in mathematics and physics at the University of Graz (Austria), he acquired practical teaching experience at Austrian grammar schools in the city and province of Salzburg. He then successfully completed his doctoral studies at the Paris Lodron University of Salzburg (Austria). From 2011, he assumed responsibility for the Austrian school system at both the research and organizational level as project manager for the central written matriculation examination in Austria and the introduction of the central written matriculation examination for mathematics at Austrian grammar schools. In 2012, he habilitated at the University of Vienna and in April of the same year accepted his first professorship at the University of Koblenz-Landau, Koblenz campus. Since October 2017, he has been conducting research as a full professor of mathematics education at the Chair of Mathematics V - Mathematics Education. In the summer semester of 2021, he was a visiting professor at the University of Semarang (Indonesia).

Hans-Stefan Siller is conducting research on various questions in the domain of mathematics education, with a particular focus on interdisciplinary research settings. His research encompasses both the traditional subjects in the teaching of mathematics, in which teaching and learning processes are examined from cognitive and affective perspectives, and the digitalization of the teaching of mathematics, including the utilization of digital tools and media, the didactic preparation of content – taking into account fundamental concepts – interdisciplinary work, and the subject of mathematical modelling. In addition to these areas, he has demonstrated a commitment to addressing significant (and emerging) challenges faced by educators, including the integration of education for sustainable development (ESD) within mathematics lessons and the utilization of artificial intelligence (AI), with a particular focus on generative AI. Since 2021, for instance, he has led the mathematics working group on the integration of education for sustainable development on behalf of the German Standing Conference of the Ministers of Education and Cultural Affairs (KMK).

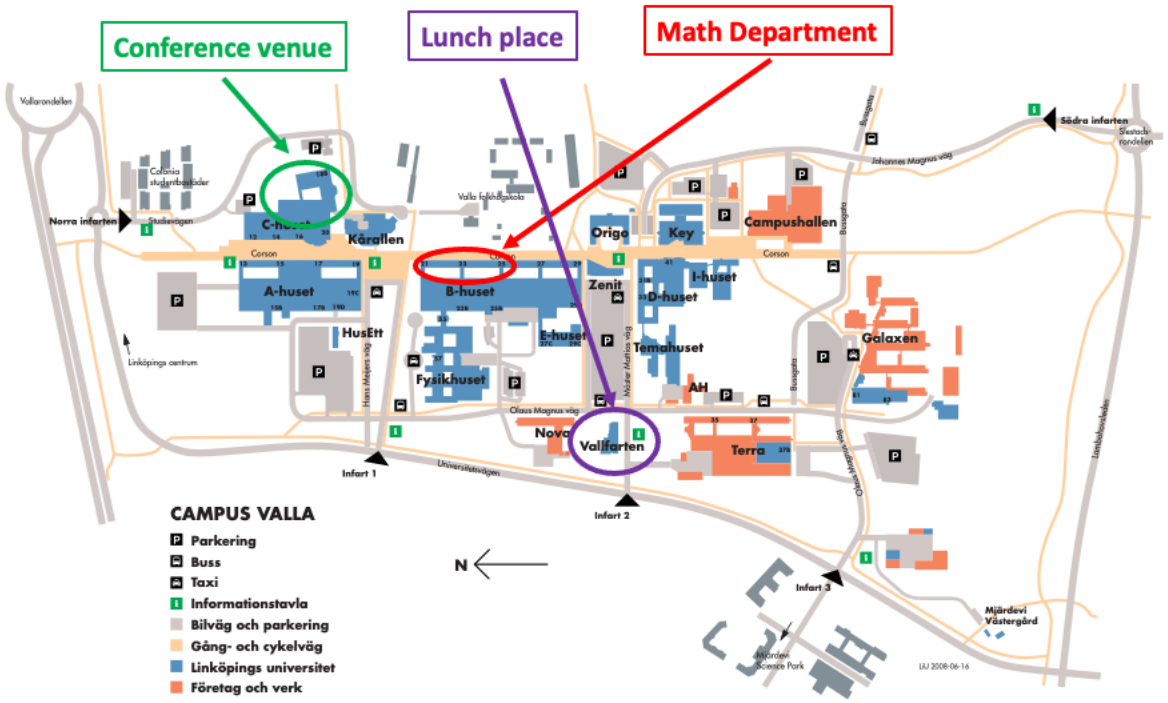
In all his research fields, Hans-Stefan Siller has demonstrated a commitment to both theoretical and evidence-based research findings, which have resulted in numerous high-ranking publications. Notably, his work is strongly oriented towards third-party funding, and seeks to integrate different perspectives, as is being implemented in one of his current projects, DIM²ENSION - DIgital Supported Mathematical Modelling for Sustainable Development Goals in EurOpean EducatioN, together with colleagues.

Since 2024, he has been contributing his expertise as an editor to the Mathematics Education Research Journal (MERJ).

Conference Venue

The venue of the conference is the campus Valla of Linköping University in Linköping: https://liu.se/en/article/campus-valla

All the academic activities of the conference to take place in one building and two adjacent corridors. The lunch restaurant is within 3-5 minutes walking distance, and the Mathematics Department were the Early career day held within 2-3 minutes walking distance.



C-building (Swedish: “C-huset”) – the main conference venue

Schematic of the C-building and the main area for the conference

c.

The lunch restaurant *Vallfarten* – "The University Club",

Social Program and Excursions

The ICTMA22 social programme includes the conference dinner on 14 August and a half-day excursion on 13 August. Please note that the conference dinner is included in the conference fee – **but the excursions are not!**

Conference Dinner

The venue for the conference dinner is the Swedish Air Force Museum (https://flygvapenmuseum.se/en/start/), where conference delegates will enjoy a dinner and drinks (included in the registration fee), and hopefully dance, surrounded by aircraft. The evening begins with a guided tour and exploration of the museum.

Excursions

When the registration opens on 15 January 2025, there will be three different excursions to choose from in different price categories:

Discover Norrköping!

Looking for an exciting getaway? Just a short trip from Linköping lies the charming city of Norrköping, renowned for its rich history and vibrant culture. *Explore the City:* Wander through the picturesque streets and take in the unique blend of old and new architecture. *Sightseeing:* visit some of Norrköping's most iconic sights, including the beautiful Motala Ström river and the historic Industrial Landscape. *Free Museums:* Enjoy free entry to the city's fascinating museums, where you can delve into Norrköping's past and present.

Don't miss out on this perfect day trip to Norrköping – where history, culture, and adventure await you! We will provide you with maps and information to help you find your way around Norrköping. You take the train to and from Norrköping at your own expense (less than 20 euros). If you want, you can be back in Linköping in time for the **Evening cruise on the Göta Canal and Lake Roxen!**

Experience Linköping like never before: Guided walking tour!

Join us for an unforgettable guided tour of Linköping, where groups of participants will have their own personal guide to lead them through the city's most captivating sights. Enjoy the luxury of having your own guide, ensuring an engaging tour. The tour will discover the rich history of Linköping as you visit landmarks such as the majestic Linköping Cathedral. Youl earn fascinating stories and facts about the city's past and present from your knowledgeable guide.

Don't miss this unique opportunity to explore Linköping in a way you've never experienced before. The fee for participating in the guided tour of Linköping is 250 SEK (about 22 euro). The fee will be paid as an add on to the conference fee if you pick this option. If you want, you can do both the guided tour of Linköping and the **Evening cruise on the Göta Canal and Lake Roxen!**

A trip to historic Vadstena!

Join us for an enchanting afternoon trip to the historic city of Vadstena, where history comes alive! Sit back and relax as we take care of your journey to and from Vadstena and enjoy a guided tour with a knowledgeable guide who will share fascinating stories and insights. During the afternoon we will **v**isit the city's renowned museums, majestic castles, and ancient monasteries, all steeped in rich history.

Don't miss this chance to explore the wonders of Vadstena. The fee for participating in the trip to historic Vadstena is 450 SEK (about 38 euro). The fee will be paid as an add on to the conference fee if you pick this option. If you want, you can do both the trip to historic Vadstena and the **Evening cruise on the Göta Canal and Lake Roxen!**

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Evening cruise on Göta canal and lake Roxen!

Experience an unforgettable evening as you glide gently between sparkling waves and twinkling stars. This picturesque setting is perfect for a successful night out. Enjoy the stunning backdrop as we cruise along Lake Roxen and Göta Canal, passing through a total of 14 locks. Included in the price of the trip is a feast of seafood delicacies, including as many shrimp as you like and it includes two 50 cl beers or two glasses of wine, along with butter, bread, cheese, mayonnaise, and coffee after the meal. We will arrange transfer to the boat that departure at 19:00 from Berg and return back at 23:00 thereafter you will be picked up by a bus, that take you back to Linköping.

Don't miss this enchanting evening cruise. Book your spot now and enjoy a magical night on the water! The fee for participating in the cruise, with transfer, shrimps and drinks is 799 SEK (about 70 euro). The boat can accommodate a maximum of 150 passengers. However, we need a minimum number of passengers for the trip to proceed. Therefore, we will delay charging the cost until mid-June.

If you want, you have time to do the guided tour of Linköping or the trip to historic Vadstena earlier in the afternoon, before going on the **Evening cruise on the Göta Canal and Lake Roxen!**

Alternative, not centrally organised, options

There are also many other options for shorter (evening) excursions in the city of Linköping and around the Linköping area (please note that none of these are included in the conference fee). Some possibilities are (listed in no particular order):

- Nature experiences: https://visitlinkoping.se/en/see-and-do/nature-experiences/
- Norrköping visualization center: https://visualiseringscenter.se/en
- Swedish Air Force Museum: https://flygvapenmuseum.se/en/start/ (*This is presently the venue for the conference dinner*)
- Old Linköping Open Air Museum: https://visitlinkoping.se/en/do/attractions/museums/gamla-linköping-open-air-museum
- Linköping Castle and Cathedral Museum: https://lsdm.se/in-english/
- Linköping Cathedral: https://visitlinkoping.se/en/se-och-gora/linkopings-domkyrka/
- Östergötlands Museum: https://ostergotlandsmuseum.se [only Swedish webpage]

Registration

Registration opens on 17 January 2025 and all individuals wishing to attend ICMTA22 must complete an online registration form which will be available on the conference website. Separate links will be provided for *Regular Academic Participants*, *PhD Students* and *Accompanying Persons*.

Please note that due to tax regulations in Sweden, conference fees and other costs depend on the type of affiliation of the participant:

- For participants representing a university or institution, the registration fee is exclusive of VAT.
- For participants who do not represent a university or institution ("other" in the registration portal) the registration fee includes VAT.
- For delegate excursions (as well as the conference dinner and bus pass for accompanying persons), all prices are inclusive of VAT.

As a result, we need to ask participants to provide the VAT number of their university or institution when registering for ICTMA22.

Please also note that accommodation must be booked separately by delegates, see below for more information on accommodation.

Registration Fee

Please note that due to regulations in Sweden, prices must be quoted and paid in Swedish Kronor (SEK). The estimated cost in Euro is based on the exchange rate that 1 Euro is approximately 11.70 SEK.

Delegates who register **before** 15 June:

Regular academic 4 973 SEK (about 425€).
PhD students 4 388 SEK (about 375€).

Delegates registering **after** 15 June:

Regular Academic 5 558 SEK (about 475€)
PhD student 4 680 SEK (about 400€)

Accompanying person can opt for participating in (Fees here must include VAT by law):

- The Welcome reception on August 10th: SEK (about 400€).
- All of the excursions (see information on excursions).
- A 5-day bus pass for transportation from Linköping city and the conference venue: 250 SEK (about 21€).

What's included with registration for delegates?

- Access to the conference venue and all sessions.
- Conference certificate.
- Welcome reception with finger food on 10 August.
- Fika (coffee breaks + snacks) twice daily on 11, 12 and 14 August and once daily on 13 and 15 August.
- Lunch on 11-15 August (packed lunch on the excursion day on 13 August and take-away lunch on 15 August).
- Conference dinner on 14 August.
- A 5-day bus pass for transportation from Linköping city and the conference venue.
- An opportunity for presenters to have their paper(s) published in the conference proceedings (provided the paper(s) qualify and pass the review process that will take place after the conference).
- A copy of a book coming out of the conference published by Springer.

Cancellations and Refund Policy

Cancellation of registration will be accepted until 28 July, 2025, up to which date the total amount will be refunded. Notification of cancellation must be made in writing and sent to Travel Team Sweden AB, at liu@travelteam.se.

Travel information and accommodation

Travelling to and from the city of Linköping, as well as local transport in Linköping, is easy and accessible.

Getting to Linköping: Long distance transportation

There are several ways to get to Linköping and please consider your CO2 emissions:

- Linköping City Airport (LPI, https://www.linkopingcityairport.se/?lang=en) has direct and frequent connections to Amsterdam Schiphol International Airport (AMS), which has many international flights. Alternatively, you can fly to Stockholm Arlanda International Airport (ARN) and then take the train or bus to Linköping (see below).
- By express train, Linköping is a stop on the line between Copenhagen Kastrup International Airport (CPH) and Stockholm Arlanda Airport (ARN). The train takes 3-3.5 hours from Kastrup and 2-2.5 hours from Arlanda. There is a direct night train from Hamburg which takes approximately 10 hours.
- There are several ways to get to Linköping by bus from Arlanda and Kastrup, as well as from a number of European cities. For example, there is a direct overnight Flixbus from Hamburg to Linköping, which takes about 12 hours.

Overviews of ways to travelling to Linköping can be found at the following webpages:

- https://visitlinkoping.se/en/plan/travel-to-link%C3%B6ping (provided by Linköping municipality);
- https://liu.se/en/article/how-to-get-to-campus (provided by Linköping university).

Getting around in Linköping: Local transportation

The public transport system in Linköping is very well developed and it is easy to get from the centre of Linköping (the hotel area) to the Valla campus by bus; see https://liu.se/en/article/how-to-get-to-campus and https://www.ostgotatrafiken.se/. Participants will receive a 5-day bus pass for transport between the city of Linköping and the conference venue, which is included in the registration fee. The bus pass will be sent by SMS, so we kindly ask participants to provide their mobile phone number when registering (in the registration portal).

Accommodation

Hotels are located in the city of Linköping, 3-3.5 km from the campus. The University has pre-arranged contracts with a number of hotels and rooms have been pre-booked for conference participants. Participants will need to book their own accommodation and the link to book with the pre-arranged hotels will be provided on the conference website when registration opens on 15 January 2025. To book a hotel, visit www.scanichotels.se and use the promocode **BICT100825**.

Transport from the hotels and Linköping city centre will be provided by the local municipal bus service. The 5-day bus ticket, a specially issued QR code, will be sent to participants' smartphones prior to the conference.

As hotel bookings can be cancelled free of charge up to X days prior to arrival, and pre-booked hotels will gradually release rooms to the public in early May, **please book your hotel as soon as possible**.