

Thematic issue of Nomad 2025

Call for papers

The teaching and learning of mathematical modelling
in the Nordic and Baltic contexts

In tandem with the advancements in technology and the ability to collect and analyze increasingly complex data, the importance of understanding and of critically assessing the uses, functions and roles of mathematical applications and modelling have become increasingly pertinent. This is one reason why mathematical modelling in mathematics education has grown internationally as a research field over the last 50 year. Presently, the research field of mathematical modelling in mathematics education is diverse, rich and active investigating various aspects of the teaching and learning of modelling. Some topics investigated, and as listed in the call for papers to the thematic working groups on applications and modelling (TWG6) at CERME13, are for example:

- The use of different theoretical frameworks and methodological approaches when researching applications and mathematical modelling: advances in the research problems; qualitative and quantitative methodologies; cross-cultural and cross-institutional comparisons; implications for students and teachers at different school levels.
- Applications, mathematical modelling and simulations in connection to other subjects: the role of modelling in interdisciplinary projects and STEM education; barriers and support for modelling in interdisciplinary and STEM contexts; mathematical modelling for the workplace.
- Use and impact of technology and other resources to support the teaching and learning of modelling: the role of digital tools, physical materials and/or experimentation in mathematical modelling.
- Teacher education for modelling and applications: teachers' competencies to support students working with applications and modelling; teacher education programs concerning applications and modelling; teachers' beliefs and didactic knowledge on modelling in education.

- Strategies to support teachers in the design and implementation of modelling: task-design and teaching techniques for modelling; problem posing in application and modelling contexts; strategies to improve students' modelling competencies.
- Assessment practices for mathematical modelling: local, national, or international modelling assessment instruments; assessment and diagnosis instruments for teachers' practice.
- Affect in the context of applications and modelling: students and teachers' attitudes and beliefs towards modelling activities inside and outside the classroom; creativity in modelling contexts.

The intention of this thematic issue is to bring together the Nordic and Baltic field of research on the teaching and learning of mathematical modelling. We will therefore invite contributions from all Nordic and Baltic countries, covering a broad spectrum of foci, approaches and content from all school levels.

Timeline

- October 15, 2023. Abstracts to be submitted. An abstract shall contain 300–600 words and 3–5 keywords.
- November 15, 2023. Feedback on abstracts.
- March 1, 2024. Full papers to be submitted.
- May 1, 2024. First round of reviews completed.
- June 1, 2024. Feedback to authors from editors.
- November 1, 2024. Submission of revised papers.
- January 10, 2025. Second round of reviews completed.
- February 10, 2025. Feedback to authors from editors.
- April 1, 2025. Final revisions to be completed.

To be accepted for this issue papers must meet the regular requirements of Nomad [see ncm.gu.se/authors]. Submitted papers will be reviewed by at least two other researchers through a double-blind peer review. Authors are expected to participate in the review process by reviewing other contributions. Authors who wish to contribute to this issue are invited to send a brief outline of the intended paper, in the form of an abstract, to Jonas Bergman Ärlebäck – jonas.bergman.arleback@liu.se – no later than October 15, 2023.

Editors for this thematic issue of NOMAD will be:

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