

CERME 14: Thematic Working Group 06

Applications and Modelling

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Scope and focus of the Thematic Working Group TWG6 – Applications and modelling

TWG6 focuses on the investigation and exploration of the role and benefits of mathematics for the study of real-world phenomena and problems in educational contexts and society. TWG6 considers various aspects of the interplay between empirical research results and theoretical approaches to the teaching and learning of applications and mathematical modelling, in mathematics and other subjects, for all school levels as well as other target groups.

Call for papers and poster proposals

In TWG6, we invite research-based papers that discuss empirical, theoretical, methodological, or philosophical issues pertaining to applications and modelling. We welcome papers that address, but are not limited to, the following foci:

- *The use of different theoretical frameworks and methodological approaches when researching application and mathematical modelling:* qualitative and quantitative methodologies; role and function of context; task-design; cross-cultural and cross-institutional comparisons; implications for students and teachers at different school levels; students' learning of modelling skills.
- *Applications, mathematical modelling and simulations in interdisciplinary contexts:* the role of, implementation of, and barriers and support for modelling in interdisciplinary projects and contexts; mathematical modelling for the workplace or sustainability.
- *The use, implementation, and impact of technology and other resources to support modelling:* the role of digital tools, physical materials and/or experimentation in mathematical modelling.
- *Teacher education and professional development for modelling and applications:* teachers' competencies to support students' work with applications and modelling; teacher education courses and programs concerning applications and modelling; teachers' beliefs and didactic knowledge on modelling in education.
- *Strategies for designing and implementing of modelling:* task-design and teaching techniques for modelling; problem posing in application and modelling contexts; strategies for improving students' modelling competencies.
- *Assessment practices for mathematical modelling:* local, national, or international assessment instruments; assessment and diagnosis instruments for teachers' practice and students' learning.
- *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.

Paper and poster proposals *must use the CERME template*, and conform to the guidelines at <https://www.cerme14.it/>. CERME 14 uses an electronic submission system <https://www.conftool.pro/cerme14/>. The authors submit the initial version of their paper on the website (uploading it both as a .doc and a .pdf file, and providing the required information, in particular the TWG number (6)).

Reviews and decisions

Each paper will be peer-reviewed by two people from among those who author papers to this TWG. *All co-authors* can be asked to review up to two papers. The group leaders will decide about the acceptance of posters. Please note that papers and posters must clearly and explicitly address and refer to mathematical applications and modelling in order to be accepted for presentation in TWG6.

Important dates

- See <https://www.cerme14.it/> for important dates