

CERME 11: Thematic Working Group 26 Mathematics in the Context of STEM Education

Leader: Behiye Ubuz (Turkey), ubuz@metu.edu.tr

Co-leaders: Michelle Stephan (USA), Koeno Gravemeijer (Netherlands), Michael Omuvwie (UK)

Scope and focus of the Thematic Working Group

STEM education includes a variety of subjects in the fields of science, technology, engineering and mathematics. Advocates of more integrated approaches to STEM education argue that teaching STEM in a more connected manner, especially in the context of real-world issues, can make the STEM subjects more relevant to students and teachers. What level of integration should be strived for, however, is disputed. If and how mathematics fits such an integrated approach is debatable. A specific point of attention concerns the fact that mathematics education asks for careful vertical planning, which might be compromised in an integrated approach. Mathematics encompasses more fields of application than science, technology, and engineering alone. So, real-life applications involving modeling and the integration of various disciplines have to be taken into account in mathematics as it prepares students for the future.

Call for papers and poster proposals

With this TWG, we want to offer participants a variety of perspectives on the position and role of Mathematics in the context of STEM. We will build on the recently published Special STEM Issue of the *International Journal of Science and Mathematics Education*. We welcome theoretical, empirical, developmental and position papers that address one or more of the following topics:

- What STEM is, or how STEM should be conceived.
- What level of integration should be strived for, especially in respect to mathematics.
- The core mathematics content that is needed to ground all STEM disciplines.
- A mathematics-specific perspective on STEM, looking at both possibilities and obstacles.
- (The design of) STEM lessons with high quality mathematical content.
- Pedagogy, especially concerning modeling and 21st century skills.
- Techno-mathematical literacy.
- Teacher professionalization in STEM.
- Connections between mathematics and computational thinking.

Papers and poster proposals should use the CERME template, and conform to the guidelines at the [guidelines website](#). CERME 11 uses a [submission website](#). 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).

Reviews and decisions

Each paper will be peer-reviewed by two persons from among those who submit papers to this TWG. Please expect to be asked to review up to two papers yourself. The group leaders will decide about the acceptance of posters.

Important dates

- **15th July 2018:** Early bird submission (please refer to the [early bird website](#))
- **15th September 2018:** Initial submission by authors in the submission system.
- **3rd November 2018:** Initial decisions on papers and posters sent.
- **24th November 2018:** The authors submit a revised version if needed.
- **5th December 2018:** Final decisions sent.
- **12th December 2018:** Final version uploaded.
- **13th January 2019:** Papers available on CERME 11 website.