

Call for Papers and Proceedings

Acceptance of contributions by the Scientific Committee on the basis of a short summary (one page).

Each contribution should deal with one of the three main topics addressed by the Symposium, which shall be explicitly identified. Maximum length of the contributions: 30 000 characters (without spaces).

All contributions will be pre-published and will be available at the Symposium.

The number of participants will be limited to 50 to allow the exchanging of ideas amongst the participants.

As a result of the meeting, the contributions will be revised by the authors so that they can be submitted for publication within a book or an international journal.

Organization of the Symposium

For the first time, the Symposium will last five days and will be held in the prestigious summer programs supported by the Universidad Complutense de Madrid. As in the previous ETM meetings it is trilingual (English, Spanish, French).

Each theme of the conference will be introduced by a plenary presentation recalling, in particular, the achievements of previous symposia.

Each topic is expected to include three or four presentations, lasting about 3 hours each, dedicated to the participants' contributions and a workshop in one or two sessions (2h/2h30).

These themed workshops are new. The aim is to develop specific aspects related to the objective of the workshop. It is organized by the chairs providing experimental evidence to make participants work on it. The workshops are also an opportunity to explore in depth a topic, create a collective dynamic by working together and strengthen links between researchers.

The number of participants is limited to 50 and the duration of the event should allow each participant to consider all the themes (the committees will be careful to balance the themes evenly).

Important dates

- Submission of a one-page abstract before the 30th November 2013.
- Notification of the review by the Scientific Committee before the 20th December 2013.
- Submission of the entire contributions before the 28th February 2014.
- After reading the contributions, the scientific committee will send them to two reviewers not later than the 31st March 2014. Reviewers should write a brief report of the contribution.
- Registration to the Symposium: April 2014.
- Submission of the reviewers' reports need to be sent to the organizing committee before the 5th May 2014, so that they can then be transferred to the authors.
- Submission of the authors' contribution taking into account the proofreading for the 1st June 2014.
- The reports from the two reviewers will be sent to authors before the Symposium.
- The Symposium will take place between the 30th June and the 4th July 2014.
- Submission of the papers for publication before the 15th September 2014.

Contact:

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2014



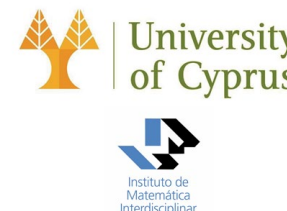
Fourth ETM Symposium Mathematical Work Space

From June 30 to July 4, 2014

El Escorial, Madrid, Spain

Facultad de Ciencias Matemáticas
UNIVERSIDAD COMPLUTENSE DE MADRID

Participating universities:



Dates: From June 30 to July 4, 2014

Lugar: El Escorial, Summer Program, Universidad Complutense de Madrid

Form: International Symposium

Languages: English, French, Spanish

Institutions: Universidad Complutense de Madrid, Université Paris Diderot, Université de Montréal, University of Cyprus

Organizing Institution: Cátedra UCM Miguel de Guzmán, Facultad de Ciencias Matemáticas, Universidad Complutense de Madrid in association with the Instituto de Matemática Interdisciplinar (IMI)

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ETM Meetings

ETM meetings are organized into working groups based on the contributions proposed by participants. The form of the Symposium allows an interesting exchange of ideas amongst participants and encourages the development of a scientific community with common interests. ETM meetings have an international dimension (Canada, Chile, Cyprus, France, Greece, Mexico, Switzerland, etc.) and a multilingual participation (English, Spanish, French).

The first ETM meeting took place in October 24-25, 2009 in Nicosia (Cyprus). Communications of this first meeting were published in the book: Gagatsis, A., Kuzniak, A., Deliyianni, E., & Vivier, L. (eds, 2009). Cyprus and France, Research in Mathematics Education, Lefkosia.

The second meeting was held in October 22-23, 2010 in Paris, for the first time in the form of a symposium. The papers presented in this symposium were published after being reviewed in the journal 'Annals of Teaching and Cognitive Sciences' (Annales de Didactique et de Sciences Cognitives, in french).

The third edition of ETM was held in Montreal in October 22-23-24, 2012. The papers in this symposium are under review in an editorial process for publication in a special issue of the journal RELIME.

General overview of the fourth ETM Symposium

ETM meetings were initially dedicated to the study, development and possible uses of the concept of Mathematical Work Space (ETM, Espace de Travail Mathématique, in french) in mathematics education. In fact, the main objective is the study of the nature of mathematical work. This evolution has deepened and diversified the approaches to the subject. In particular, the research in this field integrates the semiotic, cognitive and instrumental dimensions of mathematical work that have contributed to the definition of constituent issues of ETM. During the ETM3 colloquium, the institutional and social dimension of mathematical work was also considered, opening the idea to researching new points of view.

The main objectives of the fourth meeting are to strengthen the community of education researchers interested in ETM, and to open the issue of ETM to other areas of research.

Organization by topics

The meeting will be organized around three main topics and each contribution must fit into one of them.

Topic 1 - The mathematical work and Mathematical Work Spaces

The purpose of this theme is, firstly, to elaborate on the theoretical model defined by the areas of mathematical workspace and, secondly, to demonstrate the possible applications as an analytical tool in particular studies. The following questions could be addressed:

What is the reference knowledge and the understanding used in the ETM? The mathematical work can crystallize ways of doing and paths of thinking that appear in solving mathematical problems proposed in teaching or derived from research in mathematics. How do the identification processes of mathematical work associated with knowledge take place amongst teachers and learners? How does the ETM explain the knowledge and activities on which it is based?

The answers to these general questions could depend upon the study of cases from specific areas (geometry, analysis, probability, etc.). but also on modelling activities using the interaction of real world and mathematical models. They may also rely on historical or epistemological studies.

Topic 2 - Specific tools and signs in the mathematical work

This topic focuses on the use of technological tools and signs that are considered vehicles of knowledge in order to see how they affect mathematical work. We may set a double question in relation to their impact.

The first one is about the potential of technological environments in transforming the mathematical work of the student. As a key element of the mathematical work space, the interactions between the environment and other components offer an extraordinary case study.

The second question arises from the consideration of epistemological background present in ETM. This is used to study how the use of technology environments or systems affects the students' own epistemological construction, influencing their work. This may involve, for example, both the nature of mathematical objects that the student constructs, the proofs that are mathematically acceptable and the role of the steps of the investigation.

Topic 3 - Genesis and development of mathematical work: the role of teacher, trainer and interactions

This new topic deals with the role of the teachers and the interactions when forming a consistent but also efficient ETM. How to manage the interactions around the mathematical work in the classroom? This area will develop the analysis of these interactions and the construction of mathematical thinking from a holistic viewpoint that takes into account different interrelated dimensions (cognitive, educational, technical, affective, cultural). Specifically we will discuss what the purpose of teacher training and the trainers is during the development process. In the class, the interaction between the teacher and the students' work leads to a dynamic equilibrium of ETM. Naturally, the proposed studies within this theme may suggest other ways to describe the process of genesis involving the students and the teachers.