

## The meeting in Óbidos of the EIMI IPCommittee

The Centro Internacional de Matemática (CIM) has organized and sponsored the International Programme Committee meeting of the EIMI study that took place in Óbidos, Portugal, during 2-5 October, 2008. CIM is also hosting the study and conference website <http://www.cim.pt/eimi/> where more information can be found and will be posted regularly.

The International Program Committee (IPC) is composed by Alain Damlamian (France, co-chair), Rudolf

Strässer (Germany, co-chair), José Francisco Rodrigues (Portugal, host country), Marta Anaya (Argentina), Helmer Aslaksen (Singapore), Gail Fitzsimons (Australia), José Gambi (Spain), Solomon Garfunkel (USA), Alejandro Jofré (Chile), Henk van der Kooij (Netherlands), Li Ta-tsien (China), Brigitte Lutz-Westphal (Germany), Taketomo Mitsui (Japan), Nilima Nigam (Canada), Fadil Santosa (USA), Bernard Hodgson (Ex-officio, ICMI), Rolf Jeltsch (Ex-officio, ICIAM).



*From left to right, upper row: Gail Fitzsimons, José Gambi, Alejandro Jofré, Bernard Hodgson, Taketomo Mitsui, Alain Damlamian, Brigitte Lutz-Westphal, Henk van der Kooij and José Francisco Rodrigues; and lower row: Solomon Garfunkel, Rudolf Strässer, Helmer Aslaksen and Rolf Jeltsch.*

The ICMI/ICIAM joint Study on Educational Interfaces between Mathematics and Industry is designed to enable researchers and practitioners around the world to share research, theoretical work, projects descriptions, experiences and analyses. It will consist of two components: the Study Conference and the Study Volume.

The Study Conference will be held in Lisbon, Portugal, on April 19-23, 2010, the number of participants to be invited being limited to approximately 100 people. It is hoped that the Conference will attract not only “experts” but also some “newcomers” to the field with interesting and refreshing ideas or promising work in

progress, as well as participants from countries usually under-represented in mathematics education research meetings.

The Study Volume, a post-conference publication, will appear in the New ICMI Study Series (NISS), published by Springer. Acceptance of a paper for the Conference does not ensure automatic inclusion in this book. The Study Volume will be based on selected contributions as well as on the outcomes of the Conference. The exact format of the Study Volume has not yet been decided but it is expected to be an edited coherent book that can hopefully serve as a standard reference in the field for some time.

ICMI <http://www.mathunion.org/ICMI/>

ICIAM <http://www.iciam.org/>

EIMI <http://www.cim.pt/eimi/>



# EDUCATIONAL INTERFACES BETWEEN MATHEMATICS and INDUSTRY



An ICMI-ICIAM International Study (2008-2011)

Scientific and technological research is the basis for industrial innovation and mathematics is a key technology for the industry, interpreted in the broadest sense as any activity of economical or social value, including the service industry. The range of domains of knowledge and of the economic sector that require a variety of mathematical tools and methodology is enormous. The intimate connections between innovation, science and mathematics also demands new strategies for education of students, including more interdisciplinary training.

Classically students on all levels have been taught the tools of mathematics with little or no mention of real world applications, with little or no contact with what is done in the workplace (be it the classical engineering industry or other more recent activities like biotechnology, biomedicine, financial, insurance and risk sector or consulting engineering companies).

Nowadays one needs the solution of highly complex problems and hence some training to solve such problems, in particular real life problems, has to be given. More and more powerful computers make it possible to treat such complex problems and this is not done using only the shelf software but with innovation, often mathematical innovation.

EIMI (Education Interfaces between Mathematics and Industry) is an international study on Education and Training on Applied and Industrial Mathematics on the secondary and tertiary level, including technical and vocational education. This includes secondary school, high schools and vocational schools, and tertiary education at polytechnics and universities. In addition postgraduate education and retraining during the professional life must also be considered, as well as:

- survey and analysis of experiences, programmes

and consortia at regional and world levels, including industrial internships, Mathematics Clinics, modelling camps and summer schools;

- identification, development and assessment of curricula that include innovative applications of mathematics, highlighting industry-driven problems; including undergraduate and postgraduate programmes in conjunction with industry;
- characterizing mathematical literacy at work at different kinds of jobs; what is needed to have professionals of the adequate level;
- students activities and interdisciplinary training; didactic materials to support teaching and learning; high school, undergraduate and graduate mathematical modelling contests (applied mathematics Olympiads);
- how to set up opportunities for secondary school teachers to participate in academic industrial initiatives;
- visions; perspectives from Industry and from Academia.

The EIMI Study is a first joint collaboration between the International Commission on Mathematical Instruction (ICMI, <http://www.mathunion.org/ICMI>) and the International Council for Industrial and Applied Mathematics (ICIAM, <http://www.iciam.org>) and it was proposed by the Portuguese National Committee of Mathematicians. It was announced at the 11th International Congress of Mathematical education, ICME-11, July 6-13, 2008, Monterrey, Mexico, and the presentation of the EIMI-study is scheduled for the occasion of the 7th International Congress on Industrial and Applied Mathematics - ICIAM 2011, to be held in July 18-22, 2011, in Vancouver, BC, Canada.

Further information can be obtained in due course from the website (<http://www.cim.pt/eimi/>) of the study and/or: Alain Damlamian, at: [damla@univ-paris12.fr](mailto:damla@univ-paris12.fr) Rudolf Straesser, at: [rudolf.straesser@uni-giessen.de](mailto:rudolf.straesser@uni-giessen.de)

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