

EMS Executive Committee in Sofia 9th and 10th of July 2010

Report on the activity of the Applied Math. Committee

1) The proposal “Mathematics and Industry” prepared by the Committee on behalf of EMS and supported by the European Science Foundation is on the way.

Three Working Groups (on *Training and Careers*, *Academia-Industry Interfaces*, and *Opportunities and Challenges*) have prepared a “green paper” where “strategic objectives” and specific “policy recommendations” are presented. The document starts from the statement “...*development and progress of mathematics have always been driven both by **internal forces** (to cross the boundary) and by **external forces** (the need of solving problems arising outside the discipline). In the sequel we will often use, for sake of brevity, the term “**industrial mathematics**” to designate all the research that is oriented at the solution of problems posed by industrial applications: It cannot be considered as a field disjoint from the counterpart of a so-called “**pure mathematics**”, since on one hand it uses potentially all fields of mathematics and, on the other hand, it is a continuous source of challenges to the fundamental research on structure and methods of mathematics because it has often to deal with completely new mathematical problems.*

Consequently, the policy recommendations concern the whole mathematics. In particular, the creation of an European Institute of Mathematics (as a *virtual* institute, but with adequate funding) is strongly recommended.

2) The project has also collected more than 100 success stories of cooperation between mathematicians and companies, and will distribute a booklet illustrating them. An online survey has received more than 600 answers (from mathematicians working in academia and in industry) and was an important source of information for the preparation of the green paper. Extended summaries of reports and studies that have been published in the last two decades on the same subject have been prepared and collected in another brochure.

3) The “Consensus Conference” of the project that was held in Madrid on April 26th and 27th and obtained the official logo of the Spanish presidency of EU. It was attended by more than one hundred participants; general talks were given by Alfredo Bermudez and Pierre Louis Lions (from the academic side) and by Adel Abbas (*Airbus*), Philippe Ricoux (*Total*), Jan Sijbrand (*NIBC*), and Javier Bullòn (*Ferroatlantica*) from the industrial side. The results of the general discussion were incorporated in a new version of the Report that has been circulated again in the mathematical community through the national societies, to stimulate some more comments and remarks in order to prepare its final version.

4) The “Final Conference” of the Forward Look will take place in Brussels on the 2nd of December. It has been included –thanks to Luc Lemaire – among the official events of the Belgian Presidency of the EU and will be attended by the European Commissioner for Industry (Antonio Tajani).

5) The Applied Mathematics Committee will meet in Paris on the 24th of September to discuss future activity and initiatives.

6) The panel discussion “Does Industry need Mathematics?” organised by the Committee was held at the Euroscience Open Forum (ESOF2010) in Torino, Italy (2-7 July 2010). The speakers were Magnus Fontes, Yvon Maday, Volker Mehrmann and Nevio Di Giusto (CEO of R&D Branch of FIAT).

7) EMS Schools in Applied Mathematics:

- Bedlewo (EMS Contact person: Helmut Neunzert): “*Industrial Mathematics*” October 11-18

The organizers ask the Eastern Europe Committee for supporting some participants coming from countries of Central and Eastern Europe:

- CIME (EMS Contact person: Maria Esteban): “*Topics in mathematical fluid dynamics*” September 6-11 in Cetraro, Italy.

- EMS School in Biomathematics in collaboration with ESMTB (EMS Contact person: Mats Gyllenberg): “*Mathematical Ecology and Evolution*” August 22-29 in Turku (Finland).

8) The Appl. Math. Comm. cooperates in the scientific organization of the meeting “Mathematics in Industry” Sofia 11th-14th July 2010.