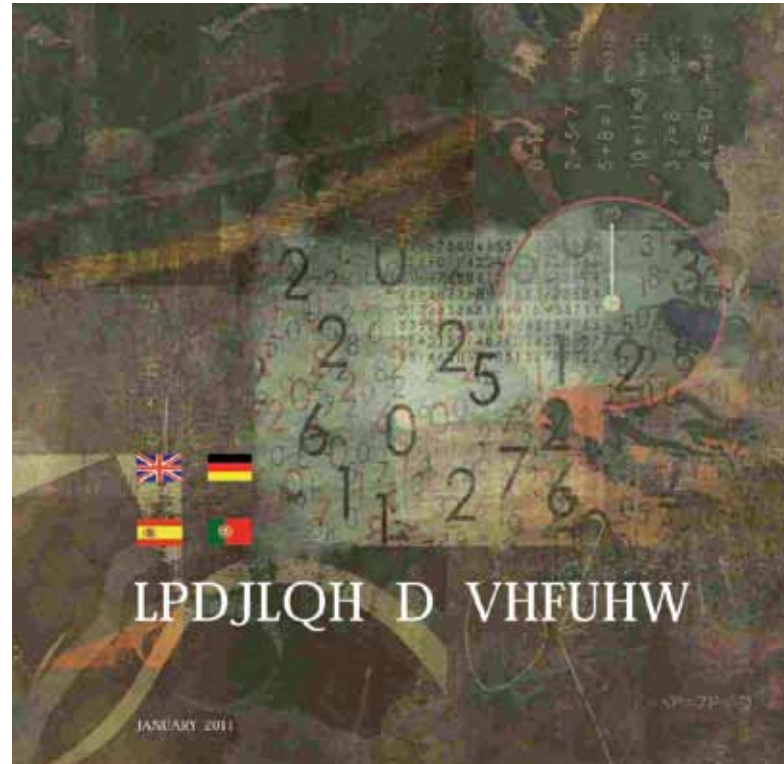


## Editorial

**2010** continued to be a difficult year for CIM from the financial point of view. However it succeeded to pursue new initiatives in collaboration with the associates and to contribute to keep in Portugal a forum for national and international cooperation among mathematicians and other scientists. In spite of the impossibility of using the facilities of the Observatório Astronómico of the University of Coimbra and the current financial crisis in the country, that do not offer optimistic perspectives of a significant change in the next years within the present framework, CIM has been supporting and organizing events in all the country in collaboration with its associates, in particular the Portuguese Mathematical Society (SPM). In particular, CIM has continued to promote and to organize national and international initiatives in the Mathematical Sciences, namely, hosting Maxim Kontsevich that delivered the second Pedro Nunes Lectures at the Universities of Porto and Lisbon, organizing the international conference on “Educational Interfaces between Mathematics and Industry” of the ICMI/ICIAM international study, which proceedings are available on line at the CIM website [http://www.cim.pt/files/proceedings\\_eimi\\_2010.pdf](http://www.cim.pt/files/proceedings_eimi_2010.pdf), offering support to the creation of the *Portuguese Digital Mathematical Library* within the Portuguese coordination of the on going EuDML project, promoting the first *Portugal-Spain MatCampus* (Acampamento Matemático) for high school students, held in Braga and Santiago de Compostela during 18-31



July 2010 and co-organizing the workshop on the Raising Public Awareness in Mathematics, held in Óbidos, in collaboration with the EMS-RPA committee, where the new art and mathematics film on elliptic curves and cryptography LPD-UHW, sponsored by Ciência Viva, was first presented the 26 September 2010 during a join session with the SPM open to the public.

## Contents

### 01 Editorial

### 03 Featured Article

Spectra in Mathematics and in Physics: From the dispersion of light to nonlinear eigenvalues  
by Jean Mawhin

17 MathCampus—a Completely new experience  
by Paula Mendes Martins and Victoria Otero-Espinar

23 An Interview with Sir Michael Atiyah  
by Ana Cristina Ferreira

27 The workshop on “Raising the Public Awareness of Mathematics” in Óbidos (Portugal)

### 28 LPDJLQH D VHFUHW

A film of art and mathematics on elliptic curves and cryptography by José Francisco Rodrigues

30 Looking forward EuDML—The European Digital Mathematics Library by André de Oliveira Gomes

The CIM Scientific Council, in its meeting held in Lisbon the 25th September 2010, has recognised that CIM has the potential input from the whole national mathematical community through its associates, good international relations, through ERCOM, and should obtain recognition from the Portuguese Fundação para a Ciência e a Tecnologia through seed money to carry out its activities in better conditions. At that meeting it was stressed the CIM character as an umbrella organization, whose associates are research centers, mathematical departments and Societies, as well as its added value of being the unique ERCOM member from Portugal. It was also recognised that CIM does not compete, nor is a threat, to the existing research centers in Portugal, that CIM's mission does not overlap with the centers' projects and activities, but are complementary and, by promoting the cooperation and links among them, CIM has an important actual value to the mathematical community in Portugal.

However, the current situation is untenable for long time and the direction, in order to provoke a change and to facilitate the associates to find a re-

newed solution for 2012 and beyond, has decided to anticipate the end of its mandate by one year, after securing another limited budget programme for 2011 that you may find in <http://www.cim.pt/?q=events> and in the pages of this Bulletin. This programme includes, among other activities in association with the CIM associates, the continuation of the *Pedro Nunes Lectures*, in collaboration with the SPM, the organisation of the Summer School on Dynamical Models in Life Sciences in the historical city of Évora, a joint event with the European Mathematical Society and the European Society for Mathematical and Theoretical Biology, the participation at the initiatives of the UTexas/Austin-Portugal programme in Mathematics, the organization of the international conference on Groups and Semigroups: Interactions and Computations, in Lisbon, and pursuing with a second initiative that aims to contribute to the IMU/ICMI Klein Project <http://www.mathunion.org/index.php?id=805> with the conference on Elementary Geometry from an Advanced point of View, at the University of Aveiro.



### Mathematics of Planet Earth 2013

visible activity can create opportunities for additional sponsorship and that, by pooling together resources, a significant level of impact can be achieved. In this initiative, the project is to hold scientific activities and activities for the public, the media and the schools.

International collaboration is encouraged.

The initiative was first launched by the North American Mathematical Sciences institutes (US and Canada). On their side, the plan is to develop a joint thematic program with the institutes hosting scientific workshops and organizing public lectures. A joint (North American) Scientific Committee chaired by Christiane Rousseau has been formed to encourage joint multi-institutes activities. The invitation is starting to be sent to societies to join and several societies are just waiting for the approval of their board to become official partners.

The initiative consists of holding a year of activities in 2013 under the theme Mathematics of Planet Earth (MPE) [www.mpe2013.org](http://www.mpe2013.org)

This program will be a great opportunity to showcase the essential relevance of mathematics in planetary issues. We are optimistic that this highly