

Report on the 4th EMS Joint Mathematical Weekend Nantes, 16th–18th June 2006

Laurent Guillopé (Chair of the organising committee)



Angers and Nantes

After Lisbon 2003, Prague 2004 and Barcelona 2005, the fourth EMS Joint Mathematical Weekend [JMW] took place in Nantes, organised by two nearby Mathematical Institutes: the *Laboratoire angevin de recherche mathématique* in Angers and the *Laboratoire de mathématiques Jean Leray* in Nantes. Despite the eighty kilometres between the two cities, there is a strong mathematical collaboration between them including a common graduate programme, joint seminars (algebraic topology, algebraic geometry and probability), co-organised international conferences, etc. These are the two largest cities in Pays de la Loire, which is one piece of the French 21-*Régions* puzzle. Both French mathematical societies (*Société mathématique de France* and *Société de mathématiques appliquées et industrielles*) gave their warm support to the organisation of the Weekend.

Angers has played its role in central European history; Princess Hedwige of Anjou was also Queen of Poland (1382–1399) (and gave part of her goods to Krakow University) and Henri de Valois, Duke of Anjou, was elected King of Poland in 1573. This close relationship between Poland and Angers is still alive today. Three professors working in the Angers mathematics department today were born and graduated in Poland! Furthermore, a Jean Leray Centennial Conference opened in Będlewo near Warsaw ten days after the Weekend. Jean Leray was born in Nantes on 7th November 1906 and, as partial differential equations and algebraic topology correspond to ancient research directions in Nantes, it was very natural that the Nantes Mathematical Institute should be named after Jean Leray.

The Weekend

Because numerous satellites conferences of the Madrid ICM-2006 were held in August and September, it was

chosen to hold the Weekend in June. It took place in Nantes on the large campus of the science faculty on the border of the Erdre River, with good downtown tramway connections and convenient facilities for the Weekend (internet access, wifi connections and the mathematical library in its beautiful modern building). An exhibition of EMS Publishing House books and journals ran over the whole Weekend, as well as an SMF booth with Society publications and another one prepared by a local scientific bookstore displaying an important selection of books related to the different topics of the Weekend.

The Weekend had financial support from the EMS, the CNRS, the *Ministère de l'enseignement supérieur et de la recherche*, the *Institut Universitaire de France*, the Universities in Angers and Nantes, the *Région Pays de Loire* and the *Communauté urbaine de Nantes*. Many sponsors have been very sensitive to the European dimension of this scientific meeting.

The scientific programme

The Weekend focused on five topics corresponding to some significant local research directions: Inverse Problems, Large Scale Stochastics, Complex Algebraic Geometry, Global Analysis, and Real Algebraic Varieties. The scientific committee tried to get a balance between applied and fundamental mathematics with an attempt to find overlaps between different topics (one speaker had been invited to two of the sessions!). Twenty-seven speakers were invited from Russia, the USA, Italy, Germany, Eire, Finland, Japan, Poland, Switzerland and France. The schedule followed the usual plan with plenary lectures and parallel sessions. During the short opening session a welcome was given in the name of the President of Nantes University by Pascal Gressier (Vice-Dean of the Science Faculty for Research) and then Luc Lemaire

(EMS Vice-President) officially opened the Weekend recording the JMW series and the main achievements of the EMS.

The titles of the plenary lectures give some idea of the varied content: Guenadi Henkin lectured on *Electrical tomography of two-dimensional bordered manifolds and complex analysis*, Nobuo Yoshida on *Directed polymers in random environment*, Claire Voisin on *Hodge classes in Kähler and algebraic geometry*, Franck Pacard on *Extremal Kähler metrics on blow ups* and Ilya Itenberg on *Tropical geometry and enumeration of real rational curves*. All titles and abstracts, with a number of pictures, can be found on the website of the Weekend: www.math.sciences.univ-nantes.fr/wems/.

Other activities

The Société mathématique de France asked Pierre Arnoux to set up a round table with the title *Europe, mathematics and young mathematicians*. The panel of colleagues, with the notable European involvement of Jean-Pierre Bourguignon, Luc Lemaire, Jean-Paul Brasselet and Bertrand Monthubert, discussed various critical topics for the strengthening of European research in mathematics: Curie fellowships, Zentralblatt Math, the European Research Council, etc.

The social programme was reduced to a minimum because of the tight schedule of the scientific lectures. On Friday, the participants enjoyed a warm reception in the city hall, a short walk through the downtown district and a (unique) dinner in the poly-arts centre *Lieu unique*. After the end of the round table at 8 pm, Saturday evening was free to visit downtown again.

The participants

About 106 mathematicians registered (there were no registration fees, except for the dinner). Less than half came from Pays de la Loire, others originating from elsewhere in France and fifteen other countries, with every continent represented. The picture on the previous page is a combination of two shots taken on Saturday afternoon.

Participants enjoyed the high scientific level of the Weekend and the fine weather that permitted walking around Nantes, which has been known as the Venice of the West. Mathematicians in Angers and Nantes were very happy with the success of the EMS-JMW. Many of the participants found these three mathematical days very positive, as shown by discussions about the next Weekends.



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Leray (Université de Nantes, CNRS and École centrale de Nantes). His fields of interest are resonances and scattering theory in geometric analysis. As the Vice-director (1995–2004) of the Cellule MathDoc, he participated in the Europeanization of Zentralblatt Math and in launching the digitization programme NUMDAM.

Call for bids: 6th European Mathematical Congress (2012)

Applications are invited to hold the 6th European Mathematical Congress in the year 2012. Applications should reach the Executive Committee in electronic form before March 15, 2007, to the address riitta.ulmanen@helsinki.fi of the EMS Secretariat.

The decision process is subject to the following guidelines:

The EC appoints a site committee in case there are more than one bid. The site committee makes its inspections during the year 2007; the costs are borne by the bidders. The site committee inspects the auditoriums and the accommodation, plans for the scientific programme, the financial plans and the strength of the mathematical community making the bid. It also takes into consideration the costs for the participants to reach the site and the costs for the stay during the congress. Special attention will be paid to the availability of inexpensive student dormitories.

Decision: In the year 2007 or 2008 the Executive Committee makes a recommendation for the site to the Council and the Council decides in the year 2008.

For guidelines concerning organisation and finances, please consult www.emis.de/.