

SPANISH COOPERATION ON MATHEMATICS 2013

Next activities are reported by Mercedes Siles and Begoña Vitoriano, secretary and president of the Commission for Development and Cooperation of the CE-MAT (Spanish Committee of Mathematics). We are sure that they are not all the Spanish cooperation developed in Mathematics with developing countries, but it can be seen a good approximation.

As a general framework of cooperation, it should be remarked that Spain through the Ministerio of Economía y Competitividad is one of the supporters of CIMPA, and the different Spanish mathematical societies are member of CIMPA.

LATINAMERICA

1) Spain-Central America

One of the most ambitious processes in this region is a Central-American PhD programme on Mathematics. Putting together all their forces (PhDs in Panamá, El Salvador, Guatemala, Nicaragua, Honduras, Costa Rica and Dominican Republic) a common programme is being designed to be developed jointly. Several difficulties have to be solved because the different regulations of PhD studies in the different countries, but it looks that finally is going to be a reality, beginning in University of Panamá in 2014, with students and professors from different countries. It is expected that in 2015 it will begin also in El Salvador. Because the lack of enough PhDs in a country, they have designed a programme in which the students will take some courses in their original countries or other ones, but the thesis will be supervised by any of the professors included in the joint programme, depending on the speciality. Spanish professors are involved assisting to the design of the programme in different countries (Mercedes Siles in Panamá, Begoña Vitoriano, Javier Gallego and Juan Tejada in El Salvador...), adapted to the needs of each country. Future projects to support this programme are being prepared in several international organisations in order to teach some courses and co-supervise thesis, including also some Central-American professors in the USA. The idea is that the students will spend some time in other countries where the co-supervisors are. UMALCA and CIMPA are looked as organisations which will be contacted, besides universities of co-supervisors.

Red GIRA is a network of universities from Madrid and some countries of Central America and Caribe based on existing projects. Universities from El Salvador (Universidad de El Salvador), Nicaragua (Universidad de León), Honduras (Universidad de San Pedro Usula), Guatemala (Universidad de San Carlos), Costa Rica (Universidad de Costa Rica), Madrid (Universidad Complutense, Universidad de Alcalá)... The network is not specific for mathematics, but this is one of the main topics of the cooperation developed until now. It is expected that the network will give also some support to the PhD programme described above.

2) Spain-Panamá

Three lecturers of the Panamá University defender their doctoral theses in 2013, supervised by Spanish researchers and by Spanish universities (one of them Mercedes Siles). They are 3 of the 12 PhD in Mathematics of Panamá. Other joint research activities are ongoing.

From 21st to 25th October 2013 the first EMALCA school in Panama was held in Penonomé (Panamá) EMALCA, with Spanish participation in the scientific committee (as Mercedes Siles) and some lecturers. A CIMPA school has been approved for 2015, and a pre-CIMPA school will be held in Panamá in 2014.

3) Spain-El Salvador

In 2013 two master programmes have been developed in University of El Salvador involving Spanish lecturers. The Master on Statistics began its fifth edition. Previous editions were taught mainly by Spanish lecturers decreasing progressively their presence, until the present situation in which the master is taught mainly by Salvadoran lecturers. Only 6 of 18 courses are taught by Spanish lectures and some of them because there were some small changes of the curriculum. The master is supported by the University of El Salvador, with some support for travelling of Complutense University of Madrid. Begoña Vitoriano collaborates as assistant of the Salvadoran coordinator (Nerys Funes).

In 2013 began the first edition of a Master in Mathematics in University of El Salvador. Mainly focused on Algebra, Geometry and Topology, on request of the professors of that university (they have a lack of specialist in those areas), it will be taught completely by European lecturers (Spanish and Italian Spanish speakers) during 2013 and 2014. The master has been supported in 2013 by University of El Salvador and in 2014 also but with some support of Complutense University of Madrid. The coordinator of the Master is Professor Javier Gallego (Complutense).

4) Spain-Mexico

The relationship between researchers of both countries is very strong and fruitful. As a proof of it is the numerous conferences co-organised by researchers of both countries, as well as the numerous of joint research. One example of this joint research is the development of a CIMPA school in Guanajuato (Mexico) sin February 17th to March 2nd of 2013, with Spanish coordinator (Mercedes Siles), Spanish invited lecturers (among others) and Spanish responsibility from CIMPA.

5) Spain-Cuba

From June 24th to July 5th of 2013 a CIMPA research school was held in La Habana. The CIMPA scientific responsible was Mercedes Siles. A future CIMPA school is being prepared for a near future, co-organised by Cuban and Spanish researchers.

6) Spain-Colombia

From 13rd to 26th January 2013 a CIMPA school took place in Barranquilla (Colombia). Professor Mozo (from Valladolid, Spain) was the no-local coordinator of the school. Professor Mozo is also supervising a PhD thesis for a Colombian student.

7) Spain-Peru

There is a research group (ECSING) including people of University of Valladolid and Pontificia Universidad Católica de Perú. As a regular activity, the VI Doctoral School on "Ecuaciones Diferenciales y Singularidades" was held, May 7-17th, 2013. The school included 4 courses taught by lecturers from University of Valladolid, University of Alicante and University Federal of Minas Gerais. Also this project includes the co-supervision of PhD. Students (Professor Mozo is supervising a PhD thesis of a Peruvian student).

AFRICA

8) Spain-Senegal

Spain's relations with Senegal, in particular University of Dakar, started several years ago.

In 2013 a CIMPA school was held in Saint Louis, Senegal, September 2nd to 13rd 2013, with Spanish responsibility (Mercedes Siles) of CIMPA. There were also Spanish researchers who taught courses.

The Master on Algebra, Geometry and Applications (MAGA) continues, with the 2013/2014 course the third edition. It involves the University of Dakar (UCAD) and different Spanish universities (Malaga, Granada, Almeria, Valladolid, etc.). Most courses are taught in person; other virtually. As a natural continuation of the teaching activities several master theses have been supervised to UCAD students, and currently three doctoral thesis are in course supervised by professors of University of Malaga and University of Cadiz (Cándido González and Antonio Jesús Calderón),

There is also Spanish presence in PhD dissertations in Senegalese universities, and joint organisation of scientific activities are being prepared, as two conferences in which organizers and scientific committees include Spanish and Senegalese lecturers.

9) Spain-Mozambique

The main project related to Mathematics is the Master on Statistics of the Universidade Pedagógica of Mozambique, with academic coordinator Spanish (Begoña Vitoriano) and all lecturers Spanish. After some previous relations with postgraduate courses, the Master programme was approved by the Universidade Pedagógica in 2011 and classes began in 2012. In 2013 were taught the last courses of the first edition, supported by Complutense University, CIMPA and Universidade Pedagógica. 2 Master theses have been defended until now, but several are in progress. In 2014, a new edition has begun which include 15 courses in 2014 and 5 courses in 2015.

Also, in 2013 a new research institute has been approved in the Universidade Pedagógica, named C-DATA, and focused on teaching and application of Statistics. Begoña Vitoriano is included in the research group. A first project was developed in 2013 for national evaluation of knowledge of Portuguese language of students in third class. The project was of the Mozambican Ministry of Education, commissioned by the World Bank. One of the main characteristics of the project is that it involved the master students (especially those of provinces), as it was a statistical analysis, as responsible persons for data collection into each region of Mozambique.

ASIA

10) Spain-India and West Asia

In this region develops a broad activity Professor Jorge Jimenez Urroz, of the Polytechnic University of Catalonia and Scientific responsible of CIMPA. These activities are conducted primarily in India, Iraq, Pakistan and Turkey.

Spain also participates in Masters Courses in this region: from November 23rd to December 19th 2013, Professor Gonzalo Aranda (University of Málaga) taught a Masters course in Salahaddin University-Erbil (Iraq). This mission was supported by the Volunteer Lecturer Programme of the Commission for Developing Countries of the International Mathematical Union.

11) Spain-Cambodia

CIMPA support a special program of a master in Cambodia. In July 1st to August 4th, 2013, Professor Gonzalo Aranda (University of Málaga) taught a course in this Master at the Royal University of Phnom Penh (Cambodia). This task was supported by the Volunteer Lecturer Program of the Commission for Developing Countries of the International Mathematical Union.