

## EMALCA at León, Nicaragua (from December 7th to December 16th, 2015)

The EMALCA at León took place at the Casa de Protocolo de la Universidad Nacional Autónoma de Nicaragua - UNAN-León, from December 7th to December 16th, 2015.



Figure 1: Group in the Casa de Protocolo de la UNAN-León

The VIII EMALCA International Committee was composed by:

Teresinha Stuchi, Universidade Federal de Rio de Janeiro, Brazil.

Alfredo Iusem, IMPA, Rio de Janeiro, Brazil.

Luis Mauricio Graña Drummond, Universidade Federal de Rio de Janeiro, Brazil.

Academic activities consisted of three courses of 13 hours and 20 minutes teaching time each, split into 8 sessions of 1 hour and 40 minutes per class, namely Dynamical Systems (SD), by Dr. Enrique Pujals, from IMPA, Rio de Janeiro, Brazil, Celestial Mechanics (MCEL), by Martha Álvarez Ramírez, from Universidad Autónoma de México, Iztapalpa, DF, Mexico and Introduction to Nonlinear Optimization (OTI), by Laura Schuverdt, from Universidad Nacional de La Plata, La Plata, Argentina. There were also three conferences by invited professors: Dr. Teresinha J. Stucchi, from Universidade Federal do Rio de Janeiro, Brazil, Dr. Alfredo Iusem, from IMPA, Rio de Janeiro, Brazil and Dr. Luis Mauricio Graña Drummond, Universidade Federal do Rio de Janeiro, Brazil.

A total of 50 Central American students from 6 different countries participated in the School, distributed as follows: 5 from Honduras, 6 from El Salvador, 4 from Guatemala, 4 from Costa Rica, 1 from Panamá and 30 students from Nicaragua. The complete list of foreign students can be found at the end of this report.

In the opinion of the vast majority of the participants, including students, professors and organizers, the VIII EMALCA achieved full success.

The policy of restricting the number of students, and at the same time offering intense publicity to the School among Central American countries, brought as a consequence that participants turned out to be the most capable and motivated from each country,

substantially increasing the average level of the group. An important contribution to this high level is due to the effort of the collaborators from several Central-American countries, who helped in the selection of the participants from each country, in particular Martín Guerra from El Salvador, Jorge Destephen from Honduras and Jorge Velázquez from Nicaragua.

As a consequence of the VIII EMALCA, several students already expressed their interest in applying for graduate programs in various Latin-American high level institutions, and also in summer programs (e.g. IMPA and UFRJ in Brazil, as well as CMAT in Mexico).

The local organization at UNAN-León, directed by Dr. Ramiro Cáceres Espinoza, with the very efficient collaboration of M.Sc. César Hernández Solís, M.Sc. Felipe Santiago Campos Álvarez, M.Sc. Carlos José Medina Prado, Br. Alfredo Alarcón, M.Sc. Fernando José Pérez Paniagua and M.Sc. Claudia Patricia Zepeda Altamirano.

This local committee managed to overcome all the main obstacles involved in organizing a meeting of this kind in a city like León, which requires a complex logistic to receive, accommodate and attend all students with a somehow limited budget. They were able to offer a friendly atmosphere to all of us for 10 days. It is also worth mentioning that on December 12th (Saturday) a nice trip was organized for all participants to visit the Masaya, Massaya lake and also the beautiful colonial city of Granada. During this one-day bus trip professors and students were able to socialize in a friendly and relaxed atmosphere.

## **SCHOOL PROGRAM**

### **Opening**

Academic formal ceremony, including opening welcome messages from Felipe Santiago Campos Álvarez, Vice Decano of the Facultad de Ciencias y Tecnología of UNAN-León University.

### **Courses**

SD: Dr. Enrique Pujals, from IMPA, Rio de Janeiro, Brazil.

MCEL: Martha Álvarez Ramírez, from Universidad Autónoma de Mexico, Iztalapa, DF, Mexico.

OTI: María Laura Schuverdt, from Universidad Nacional de La Plata, La Plata, Argentina.

## Schedule

	8:30-10:10	10:30-12:10	14:00-15:40	16:00-17:30
Monday 7/12	Opening	OTI	MCEL	SD
Tuesday 8/12	OTI	MCEL	SD	Conf. LMGD
Wednesday 9/12	OTI	MCEL	SD	
Thursday 10/12	OTI	MCEL	SD	
Friday 11/12	OTI	MCEL	SD	Conf. TJS
Saturday 12/12			Excursion	
Sunday 13/12			Free day	
Monday 14/12	OTI	MCEL	SD	
Tuesday 15/12	OTI	MCEL	SD	Conf. AL
Wednesday 16/12	OTI	MCEL	SD	Closing

## Conferences

1. LMGD - Luis Mauricio Graña Drummond, UFRJ, Rio de Janeiro, Brazil, Resolution of non linear problems in multiobjective optimization.
2. TJS - Teresinha J. Stuchi, UFRJ, Rio de Janeiro, Brazil, Stability of the equilibrium points in the planar Lagrangian four body problems.
3. AI - Alfredo Iusem, IMPA, Rio de Janeiro, Brazil, How pointed is a cone?

Diplomas distribution and closing words by Felipe Santiago Campos Álvarez, Vice Decano, Dr. Luis Mauricio Graña Drummond and a representant of all students that participated in this VIII EMALCA.

## Fioreign participants

### GUATEMALA

1. Fernando Mazariego Camas
2. Glenda Gómez
3. Billy Othomarro Quevedo Carranza
4. José Romero

### HONDURAS

1. Sergio Alejandro Gómez
2. Dariela Jissel Cerna Fonseca
3. Kebin Jeancarlos Velásquez Peña

4. Luis Kenny Orellana Cáceres
5. Francis Stefany Vásquez Cáceres

#### COSTA RICA

1. Adriana Calvo
2. Cristhian Peña Sierra
3. Héctor Méndez
4. Jéssica Jiménez M.

#### EL SALVADOR

1. José Alfredo Hernández Pérez
2. Manuel Montiel
3. Tobías Humberto Martínez Lovo
4. José David Zaldívar
5. Víctor Sandoval
6. Noel Humberto Campos

#### PANAMA

1. Ted Augusto Jimenez Tejeira

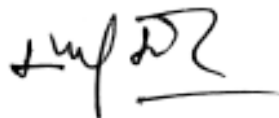
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We believe that a natural continuation of VIII EMALCA should be another such school in El Salvador in 2017 in view of the interest of the University of El Salvador, San Salvador.

Rio de Janeiro, January 18th, 2016



Teresinha J. Stuchi



Luis Mauricio Graña Drummond