

**Emma Perracchione.**

**Scientific report DOC-Course 2 March-29 May 2015.**

I attended the DOC-Course in *Applied Mathematics and Optimization* (University of Seville (IMUS) and Basque Center for Applied Mathematics (BCAM) Bilbao).

I followed the courses listed below:

1. Advanced course in Nonlinear Optimization. Lecturers: E. Carrizosa, J. Puerto (University of Sevilla), J. B. Lasserre (LAASS-CNRS-Toulouse).
2. Multiscale and Multiphysic Computational Mathematical Modeling. Lecturers: D. Pardo University of the Basque Country; J. Jansson (Basque Center for Applied Mathematics).
3. Computational fluid dynamics. Lecturers: E. F. Nieto, F. Guillen (University of Sevilla); L. Remaki (Basque Center for Applied Mathematics).
4. Modelling and optimization algorithms in networks design and energy planning. Lecturers: J.A.Mesa, F. Ortega-Riejos (University of Sevilla); Gloria Perez, Maria Merino (University of the Basque Country); Laureano Escudero (European Cooperation in Science and Technology).

I followed the workshops listed below:

1. Mixed Integer Nonlinear Programming (MINLP15), Sevilla, Spain, March 30<sup>th</sup>-April 1<sup>th</sup>, 2015.
2. BCAM Workshop on Mathematics and its Applications, Bilbao, Spain, May 27<sup>th</sup> – 29<sup>th</sup>, 2015.

I started to develop the research project:

*Application of recursive proper orthogonal decomposition to the modeling of air-wall heat transfer in buildings.*

The latter has been presented as scientific communication:

- 1 T. Chacon Rebollo, M. Gomez Marmol, E. Perracchione\*, José Manuel Vega, Recursive POD with applications in fluid dynamics: modeling of air-wall heat transfer in buildings, BCAM Workshop on Mathematics and its Applications, Bilbao, Spain, May 27<sup>th</sup> – 29<sup>th</sup>.

Our propose is to continue and publish such work in the future months.

Below the documentation concerning the attendance at the Doc-Course can be found.



imus

<http://www.imus.us.es/MINLP15/>

To whom it may concern:

**Emma Perracchione**

has participated in the

**II SEVILLA WORKSHOP**

**Mixed Integer NonLinear Programming**

held in Seville, March 30<sup>rd</sup> - April 01<sup>st</sup>, 2015.

Seville, April 01<sup>st</sup>, 2015

  
Instituto Universitario de Investigación  
de Matemáticas de la Universidad  
de Sevilla Antonio de Castro

The Organizing Committee



EN RECONOCIMIENTO A LOS MÉRITOS CONTRAÍDOS EN EL DOC-COURSE 2015  
«APPLIED MATHEMATICS AND OPTIMIZATION»  
CO-ORGANIZADO POR EL BASQUE CENTER FOR APPLIED MATHEMATICS (BCAM)  
EL INSTITUTO UNIVERSITARIO DE INVESTIGACIÓN MATEMÁTICA DE LA UNIVERSIDAD DE SEVILLA  
«ANTONIO DE CASTRO BRZEZICKI» (IMUS)  
Y LA UNIVERSIDAD DEL PAÍS VASCO - EUSKAL HERRIKO UNIBERTSITATEA (UPV-EHU)  
DEL 2 DE MARZO AL 29 DE MAYO DE 2015, SE EXPIDE EL PRESENTE

# DIPLOMA

A

**Emma Perracchione**

El director del curso  
Justo Puerto Albandoz