

CALL for Pre-Doctoral Contract, PhD Position – Research Project (4 years).

Department of Statistics, Mathematical Analysis and Optimization
Research group: Models of optimization, decision, statistics and applications
(<http://eio.usc.es/pub/gi1914/>)

Models of optimization, decision, statistics and applications, **MODESTYA**, offers a pre-doctoral grant with a duration of 4 years within the call: [Ayudas para contratos predoctorales para la formación de doctores 2017](#) (Ministerio de Economía y Competitividad).

The aim of this contract is to develop a doctoral thesis (PhD) within the research lines of the project: NONPARAMETRIC MODELLING OF DYNAMICS AND DEPENDENCIES IN COMPLEX SYSTEMS ([Innpar2D¹](#)) (MTM2016-76969-P) funded under the National Program for Mathematics, whose main researchers are Wenceslao González Manteiga and Rosa M^a Crujeiras Casais.

The call details are available at:

http://www.idi.mineco.gob.es/stfls/MICINN/Ayudas/PE_2013_2016/PE_Promocion_e_Incorporacion_Talento_y_su_Empleabilidad/FICHEROS/SE_Formacion/Ayudas_contratos_predoctorales_formacion_doctores_2017/Convocatoria_predoctorales_2017.pdf

The information related to:

- First steps before applying.
- Documentation to be presented in the application.
- Enrolment application

is available on the [WEBSITE](#) of the funding Agency.

APPLICATIONS:

The deadline for submission of applications will be from October **3rd to October 18th, 2017 at 3:00 p.m. (Spanish time)**. Applications will be made electronically through this [WEBSITE](#).

¹ <http://eio.usc.es/pub/innpar2d>

REQUIREMENTS:

- The call requires to be enrolled or admitted in a doctoral program on the date the contract is formalized.
- MODESTYA research group will prioritize candidates holding a Degree in Mathematics or Statistics or any other degree with solid mathematical basis as well as interest in the development of a professional career in the field of research.
- The main work will be held in Santiago de Compostela. The disposal to conduct frequent national and international research stays will be assessed.

PROJECT DESCRIPTION

The **research lines of the Innpar2D** project focus on **non-parametric inference** of curves, which has allowed to respond to applied problems in areas such as medicine, biology, economics or environmental sciences, among others, in recent years. Specifically, the research lines included in the project are the following:

- L1. Models with random effects
- L2. Structured models
- L3. Quantile regression methods
- L4. Functional and high-dimensional data
- L5. Directional data
- L6. Incomplete data
- L7. Spatial and spatio-temporal processes
- L8. Set estimation

The training project for the incorporation of a pre-doctoral student will be determined according to the progress made up to the moment of the student's incorporation (on the project web page can be consulted the associated publications of the group). In general, it can be specified that the thesis project can be located on several project lines, including three types of objectives: (1) methodological objectives, mainly on estimation and goodness of fit contrasts on one of the previous lines of research; (2) practical objectives, focusing the work to the resolution of some applied problem; (3) objectives on software development, with the implementation of techniques proposed in open source.

In addition, during the PhD thesis development period, the pre-doctoral student will attend training courses related to his thesis project. It would be desirable to carry out at least one research stay of at least four months. Although the center of destination will depend on the selected topic, it is possible to make known that the Institut de Statistique, Biostatistique et Science Actuarielles of the Université catholique de Louvain (Belgium) or Faculty of Economics and Business (KU Leuven), with which the group maintains a close collaboration is a good alternative that would cover almost the totality of the lines considered in Innpar2D. Finally, the direction of the thesis will be assumed by some of the members of the research group, with demonstrated leadership capacity.

CONTACT: Wenceslao González Manteiga wenceslao.gonzalez@usc.es a Rosa M. Crujeiras Casais rosa.crujeiras@usc.es , for more Information.