

## VAC-2019-66 – Severo Ochoa PhD Position in Aeronautics Group

The International Centre for Numerical Methods in Engineering (CIMNE, [www.cimne.com](http://www.cimne.com)) is a research centre, created in 1987 by consortium between the Catalan Government and the Technical University of Catalunya, devoted to the development and application of numerical methods to a wide range of areas in engineering. CIMNE has been selected as a Severo Ochoa Centre of Excellence for the period 2019-2023. This is the highest level of recognition of excellence and leadership awarded to a research centre in Spain.

CIMNE is offering a research position that will be funded by the Severo Ochoa Programme.

### Position details

**Number of vacancies:** 1

**Category:** PhD (PHD3)

**Workplace:** Barcelona

**Salary (gross):** 16.167,91 EUR

**Weekly working hours:** Full time

**Duration:** 3 years

### Functions to be developed by the applicant

CIMNE is looking for a **PhD Researcher** to be part of the Research and Technical Development (RTD) Group on Aerospace Engineering. Being a multi-disciplinary group, the Aerospace Engineering Group at CIMNE is focusing on CFD for membrane structures, like parachutes, and Optimization methods, like Genetic Algorithms. In collaboration with other groups in CIMNE is also dealing with research in structural mechanics and materials. Applications range from flight performance of parachutes, inflatable structures, meshless methods, composite materials optimization, Game theory, hybrid genetic algorithms for aeronautical shape optimization, and transport system optimization. The group is collaborating with international research establishments in the field of optimization and disruptive aircraft configuration, field the research proposal will focus on.

The functions assigned to the candidate will be:

- Complete a PhD on Aeronautical shape optimization of disruptive configurations. The candidate is expected to complete the PhD thesis in a maximum of three years.
- Collaborate with various research groups within CIMNE and worldwide.
- To publish a minimum of two papers in JCR journals during the PhD period.

### Requirements

1. The position is aimed at students (Spanish nationals, EU and non EU citizens) who have completed one of the following options:

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a) The studies that lead to an official Spanish, or European Higher Education Area, 1st cycle university degree (BSc) in (Aeronautical and Mechanical Engineering) and that have 180 credits (ECTS) of an official university degree.

b) A degree from a non-European Higher Education Area university that gives access to MSc studies in (Aeronautical and Mechanical Studies).

To be eligible for the scholarship grant the applicants have to be formally enrolled to a doctoral program or meet the conditions to be enrolled to a doctoral program at the moment of the recruiting.

2. Excellent academic record.
3. High working knowledge of English.
4. Candidates who have already been awarded a PhD are not eligible to apply.
5. Good programming skills; good knowledge of C++ and Python
6. Good knowledge of optimization methods; being genetic algorithm a plus
7. Good knowledge of LINUX environment

### Other valued skills

- Previous research or academic experience in the field of the position
- Programming skills; other programming languages like Fortran95, QT, ,
- Knowledge of MATLAB, OCTAVE or similar
- Language skills: other EU languages (French, German, Spanish or Catalan will be a plus)
- Knowledge of optimization methods (deterministic and stochastic ones)
- Knowledge of operation research techniques
- Knowledge of HPC and HTC environments
- Knowledge of LATEX and Office packages

### Evaluation procedure

The requirements and merits will be evaluated with a maximum mark of 100 points. Such maximum mark will be obtained by summing up the points obtained in the following items:

- Academic record (60%)
- Previous research and academic experience in the field of the position (20%)
- Programming skills (10%)
- Language skills (10%)

### How to apply

Candidates must complete the "[Application Form](#)" on our website, indicating the reference of the vacancy and attaching the following documents:

- A curriculum vitae
- A motivation letter
- At least one reference letter
- Certified academic record (both Undergraduate and the MSc degrees)

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The deadline for registration to the offer ends on **January 31, 2020 at 12:00 noon**.

Application will be reviewed by CIMNE Severo Ochoa selection committee. The shortlisted candidates may be called for an interview and must send to [seleccio@cimne.upc.edu](mailto:seleccio@cimne.upc.edu) all the proving documentation of the requirements and merits, if not already submitted during the application phase.

*CIMNE is an equal opportunity employer committed to diversity and inclusion. We are pleased to consider all qualified applicants for employment without regard to race, colour, religion, sex, sexual orientation, gender identity, national origin, age, disability or any other basis protected by applicable state or local law.*

*CIMNE has been awarded the HRS4R label.*