

ANNOUNCEMENT FOR PROVISION OF THE WORKPLACE

VAC-2023-11 – Research engineer in High Performance Computing with unfitted finite elements

Number of places: 1

Category: RENG 6

Workplace: Barcelona

Salary (gross): In accordance with the salary categories of the centre

Weekly working hours: 40h

Functions to be developed:

The position is funded by the project AMBBOS, Advanced computational Mathematics for Breeding Blanket Optimal deSign, a 3-year Spanish project focused on the development of numerical methods for the optimal design of breeding blankets (BB) in fusion reactors, a key component of fusion reactors.

The selected candidate will be responsible for the development of unfitted finite elements algorithms that permit to deal with complex geometries, as required by the application. In particular, the design, analysis and implementation of new methods for the automatic generation of background meshes that capture geometries with explicit (CAD) representation and permit numerical integration is expected.

The developed methods will be implemented in the Julia programming language, using the Gridap ecosystem as a basis (<https://github.com/gridap>) and will exploit high performance computing resources.

Required skills:

- Programming experience in scientific computing.
- Experience in the development of finite element software.
- Writing and communication skills (oriented towards the production of project reports).

Other valued skills (not mandatory):

- Advanced programming skills, e.g. distributed parallel programming, object-oriented and/or functional programming.
- Experience in unfitted finite elements and geometry representation and approximation.

Qualification system:

The requisites and merits will be evaluated with a maximum note of 100 points. Such maximal note will be obtained summing up the following points:

- **Publication and career track:** 10%
- **Previous research and academic experience in the field of the position:** 10%
- **Programming skills:** 10%
- **Language/communication skills:** 10%
- **Interview:** 60%

Candidates must complete the "Application Form" form on our website, indicating the reference of the vacancy and attaching the required documents.

The deadline for registration to the offer ends on February 21, 2023 at 12 noon.

The preselected candidates may be requested to send the documentation required in the "Requirements" and "Merits" sections, duly scanned, and may be called to go through selection tests (which might be of eliminatory nature) and / or personal interviews.

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