



Carrer de la Llum 2-26
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Título puesto: Thermomechanical Calculation and Simulation, Fluids and Hydraulics

Curso: 2026/27

División: Engineering

Descripción del proyecto:

This is a position within the Simulations, Cryogenics and Fluid Mechanics Group of the Transversal Section of the Engineering Division. The candidate's main responsibilities include performing FEA and CFD simulations for ALBA projects, and eventually vacuum simulations. Activities in the experimental field related to thermal and fluid dynamics are also considered part of the role.

Program Contents:

- Development of FEA simulations for structural static, structural dynamic, and vibration analyses.
- Development of FEA simulations for thermo-mechanical calculations and CFD simulations for fluid dynamics applications.
- Design and optimization, based on simulations, of ALBA Synchrotron components exposed to thermal loads from synchrotron radiation.
- Simulation of hydraulic fluid distribution networks.
- Development of thermal and hydraulic experiments in the group's experimental units: thermal contact studies and flow rate vs. pressure drop and heat transfer coefficient correlations.
- Thermal and hydraulic diagnostics of ALBA Synchrotron systems and subsystems using specific instrumentation.

The commonly used calculation tools include: ANSYS Workbench, SYNRAD, Moldflow, PipeFlowExpert, MATLAB, C++, among others.



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Perfil del estudiante:

Aerospace, Industrial, Mechanical Engineering student, or equivalent, interested in specialized calculation tasks using CAE tools, simulation software in general, and 3D modeling with CAD-CAE tools.

Tutor: Marcos Quispe

Responsable División: Joan Casas