

## Call for contribution of expertise

CERN invites collaborating institutes and universities to contribute the expertise of their qualified employees to the activity described below.

*Start date:* ASAP

*Duration:* Two years, possible extension to a maximum of up to three years.

*Project/Activity:* Mechanical engineer (Simulations) for the Crab cavities project (HL-LHC project)

The Mechanical and Materials Engineering Group (MME) of the Engineering department (EN) is in charge of engineering support combining mechanical design, production facilities and material sciences, for the maintenance of CERN facilities and the manufacturing of prototypes as required for CERN projects.

Within the Engineering Design and Simulation section of EN-MME group and in the frame of the Collimation mechanical engineering related activities, the expert will be involved in the engineering, design and fabrication of 3 prototype collimators to be produced by the EN-MME workshop for the LHC Injection Region Cleaning, one upgraded prototype of the Long Shutdown 3 halo collimators, masks and ancillaries.

The work requires the development of sophisticated mechanical systems based on structural, thermal, fluid-dynamics numerical simulations as well as the study and characterization of relevant materials. Additionally, the expert shall closely interact with the EN-MME workshop as well as the Materials, Metrology & NDT section, taking a leading role in the procurement, fabrication, assembly and follow up phases for the prototypes to be built.

*Profile:* Mechanical engineering diploma or equivalent.

*Specific details:* Experience in the design and advanced mechanical analyses using analytical and numerical methods. Ideally, knowledge of manufacturing technologies, material properties and use of non-conventional materials, analysis and testing methods, pressure vessels standards, cryogenics, ultra-high vacuum technology. Basic knowledge of CAD tools would be an advantage. Excellent organization and communication skills

*Status at CERN:* Associated Member of the Personnel (Project Associate).

Conditions in accordance with CERN's Staff Rules and Regulations and Administrative Circular No. 11. Subsistence allowance is payable by CERN to cover the additional cost arising from the individual's (and, as applicable, their family's) stay in the local area while performing activities at CERN.

*Option:* Collaborating institutes and universities can propose to support the activity of the qualified employees participating in this "Call for contribution of expertise" with students or other employees. Their status and Subsistence allowance when applicable will be adapted to their relation with their institutions

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*Reference:*2019\_Q4\_35\_Simulations\_Collimators