



R&D ENGINEER - QUANTUM GRAVIMETERS

Start date : asap

Contrat type : permanent position

Location : Gradignan (near Bordeaux), France

Company presentation

✓ Company

Exail is a leading high-tech industrial group specializing in cutting-edge robotics, maritime, navigation, aerospace and photonics technologies. With a strong entrepreneurial culture, Exail delivers unrivaled performance, reliability and safety to its civil and defense clients operating in severe environments. From the deep sea to outer space, Exail expands their capabilities with a full range of robust in-house manufactured components, products and systems. Employing a workforce of 1500 people worldwide, the company benefits from a global footprint and conducts its business in over 80 countries.

Exail was formed by ECA Group and iXblue joining forces in 2022. It is a subsidiary of Groupe Gorgé, a family-owned company specialized in high-technology.

Working at Exail in Talence means evolving in a stimulating and innovative environment where team development is considered an essential element of the company's success.

✓ Context

The Quantum Systems activity stems from the absorption by Exail in 2021 of the start-up Muquans. It has developed unique expertise in the field of quantum sensors. These revolutionary instruments, at the frontiers of science and technology, are based on laser, optoelectronic and ultra-high vacuum sub-assemblies combining numerous functionalities and offering very high-level performance.

You will be working in a division of around 40 people. This diverse and dynamic team combines skills in optics, lasers, electronics, computing, systems, mechanics, ultra-high vacuum and atomic physics

Responsibilities :

The successful candidate will join the Quantum Instruments team in charge of developing and producing:

- **Absolute quantum gravimeters** capable of measuring gravity with a relative accuracy of 10^{-9} , dedicated to many geophysics applications including volcanology.



- Differential quantum gravimeters measuring gravity's vertical gradient to 10^{-10} g/m
- Laser-cooled microwave atomic clocks providing a time reference with relative stability of 10^{-15}

In this context, you will work on the quantum gravity sensors product line. Your activities will include:

- performing thorough characterization of instruments from the first tests of the experimental sequence to the final metrological assessment and in accordance with our internal processes, to make sure they meet the specifications.
- Performing the required data analysis, having a critical assessment of the results and participating in reviews with the team
- participating in post-sales customer support activities.
- participating in communication during exhibitions or conferences.
- participating in new developments at the component, subsystem or instrument level

Education

- PhD in physics with specialisation in quantum mechanics or optics

Skills and abilities

- Strong experimental skills: manipulation of set-ups and measurement instruments involving electronics, optics, ultra-high vacuum
- Data analysis and processing, ideally using Python
- Atom cooling and manipulation techniques will be appreciated
- An experience in metrology will be appreciated
- Demonstrated interpersonal skills
- Good communication skills for client interaction

Salary: Based on experience

Location: Exail Quantum Systems, Institut d'Optique d'Aquitaine, Talence , France

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