

## Postdoctoral position in Machine Learning for Quantum Many-Body Physics

Institute of Cosmos Sciences, University of Barcelona

### Job description

The Atomic, Molecular & Nuclear Area of the University of Barcelona ([http://icc.ub.edu/research/research\\_areas/nuclear\\_physics](http://icc.ub.edu/research/research_areas/nuclear_physics)) invites applications for a postdoctoral position focused around machine learning and its application to solve the quantum many-body problem. The candidate will work with Dr Arnau Rios in the application of neural quantum states to solve quantum many-body problems of interest across several disciplines, including nuclear theory.

The candidate is expected to:

- ☐ Advance cutting-edge knowledge on neural quantum states and/or nuclear theory.
- ☐ Develop strong programming skills and prepare open-source code for scientific purposes.
- ☐ Publish research in leading scientific journals and present it at international conferences.
- ☐ Work both independently and in a team environment.
- ☐ On occasion, supervise more junior research staff.

The Atomic, Molecular & Nuclear Physics Group has broad interests, including **nuclear** and **hadronic** physics (theory); quantum **many-body** physics; and **quantum technologies**. Group members are also typically ascribed to the Institute of Cosmos Sciences (ICC-UB, <http://icc.ub.edu/>), a Maria de Maeztu Unit of Excellence with about 180 staff working in all aspects of cosmological sciences. We acknowledge, understand, and embrace cultural and gender diversity.

### Employment conditions

The position is offered for one year, renewable for another year depending on the availability of funding and performance, and it is expected to begin in early 2024. Gross annual salary includes social security and public healthcare benefits, covering spouse and children.

### Application procedure and deadline:

Applicants should fill in this [link](https://shorturl.at/adAIQ) (<https://shorturl.at/adAIQ>) with their information and that of **two referees** who will provide recommendation letters.

After the form is submitted, candidates will receive an email with instructions on how to upload the required application materials:

- ☐ Curriculum Vitae, including an up-to-date publication list;
- ☐ Cover letter including research experience and interests (2 pages max).

The referees will receive an email with instructions to upload their letters.

The application deadline is

**15 December 2023**

Inquiries about the application submission can be directed to Esther Pallarés, [secretaria@icc.ub.edu](mailto:secretaria@icc.ub.edu). For inquiries about scientific aspects, please contact Arnau Rios, [arnau.rios@icc.ub.edu](mailto:arnau.rios@icc.ub.edu).

## About the Institute of Cosmos Sciences

The Institute of Cosmos Sciences is a research institute of the University of Barcelona. It is an interdisciplinary center dedicated to fundamental research in the fields of cosmology, astrophysics, and particle physics. In addition, the institute has a strong technology program through its participation in international collaborations in observational astronomy and experimental particle physics.

As part of the University of Barcelona, the ICCUB is a recipient of the European Commission's HR Excellence in Research (HRS4R) Award, which recognizes, among other achievements, respect for equal opportunities and the capacity to attract talent in a positive working environment that promotes the pursuit of successful research careers. The ICCUB respects the principles of open, transparent, merit-based selection. We strongly encourage women and underrepresented minorities to apply. For additional information please see the [Diversity, equity and inclusion Commission](#).

The ICCUB is located in Barcelona, considered the 8th World's Best Cities 2021: one with near-perfect weather year-round, miles and miles of beaches, iconic parks, striking architecture and colorful neighborhoods that march to their own beat—artistic, sophisticated, bohemian. Moreover, it is a pole of attraction for the technology sector, a top choice to establish a company in this sector, and it hosts some of the world's major technological events, such as the Mobile World Congress and the Smart City Expo. In addition, Barcelona and its metropolitan area is a leading destination on the map of global technological ecosystems and has infrastructures such as science parks, universities and the 22@ district.

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