Centrum Fizyki Teoretycznej
Polskiej Akademii Nauk
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HR EXCELLENCE IN RESEARCH

Research assistant (PhD student) - R1 researcher (f/m/x) - part-time

Ref Number: MSz/32/2026
Location: Warsaw, Poland
Salary: 4 000 - 4500 PLN/month gross (depending on the candidate's qualifications and experience)
Number of positions available: 2 (0.5 FTE each)
Work Arrangement: In-Person
The role is available from **01.01.2027 at the earliest** for a period of **12 months, half-time position.**

Important Dates:
1. Application deadline: **30.11.2026**
2. Candidates will be informed about the results by **mid December.**

Founding Source:
EUCENTRAL: CENTER FOR QUANTUM TECHNOLOGIES MODELLING - [HORIZON-WIDERA-2023-TALENTS-01-01] — [ERA Chair] project financed by the European Commission (agreement no.: 101186579).
Project website: https://eucentral.cft.edu.pl/

About us

The Center for Theoretical Physics of the Polish Academy of Sciences (CTP PAS) is a research institute focused on the study of theoretical physics. The CTP is located in Warsaw, Poland, and was founded in 1980.

The CTP PAS conducts research in various fields of physics, including quantum information, space and gravity research, semiconductors, and atomic gases. The Institute's strategy is to employ the strongest scientists, giving them the freedom to conduct their research. This has resulted in the CTP's high standing in Poland, world-class publications (in Nature and Science), a large number of grants (approximately 30 projects), and participation in international consortia. In terms of citations per researcher, CTP PAS ranks among the leading institutions in Polish physics.

The CTP PAS also hosts a number of scientific events, including seminars, workshops, and conferences, which are open to the public. The Institute also creates educational content accessible on its official YouTube channel.

Funded by the European Union

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Modelling Center for Quantum Technologies

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About the role

We are seeking two research assistants - PhD students (f/m/x), who will join the Modelling Center for Quantum Technologies group at the CTP PAS, led by Dr. Federico Balducci (Team Leader). The group will collaborate closely with the group of prof. Marzena Szymańska (ERA Chair Holder) at University College London.

The candidates (2 half-time positions) will work on numerical methods for quantum open many-body systems related to the project, such as the quantum trajectory method for multimode ultracold gas with particle losses. These methods are already being developed at CTP PAS, but they are not broadly accessible yet, and need to be integrated with other repositories.

Enquiries regarding the role or the recruitment process can be addressed to Dr. Federico Balducci (fbalducci@cft.edu.pl and prof. Marzena Szymańska (mszymanska@cft.edu.pl).

If you need reasonable adjustments or a more accessible format to apply for this job online, please contact recruitment@cft.edu.pl.

About you

Essential qualifications, experience and knowledge

Master's degree in Physics, or a related field confirmed by a diploma or a certificate issued by the educational institution; candidates who have not yet formally obtained the degree may also apply, provided they submit documentation confirming the current stage of the degree-awarding process and obtain the degree before the start of employment.

Essential skills and abilities

Strong background in quantum statistical mechanics and quantum many-body theory, including soluble models.
Programming skills and experience with numerical computations.
Excellent written and oral communication skills, and ability to work both independently and as part of a team.

Desirable qualifications, experience and knowledge

Experience with open quantum systems, e.g. master equations and/or quantum stochastic calculus - like truncated Wigner, positive P. Familiarity with numerical tools for many-body quantum systems (e.g. exact diagonalization, tensor networks).

Desirable skills and abilities

Experience with version control and collaborative coding (GitHub).

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What we offer

- Half-time fixed-term employment contract,
- Salary: ca 4 000 - 4500 PLN (gross) per month (depending on the candidate's qualifications and experience); additionally, the employee may be entitled to bonuses, awards, or other components of remuneration in accordance with the Remuneration Regulations in force at the Institute. The remuneration is determined and paid in accordance with the Remuneration Regulations in force at the Institute.
- A scientifically stimulating research environment,
- A friendly and flexible work environment,
- Sharing knowledge and experience,
- Flexible working hours,
- A diverse and inclusive culture where mutual support, team work and respect are highly valued,
- Multisport card subsidy,
- Holiday subsidy
- Nursery and kindergarten subsidy

We will consider applications to work on a part-time and flexible basis wherever possible. We encourage you to discuss your flexible working needs during the interview process.

How to apply

Applications should be sent to recruitment@cft.edu.pl by 30.11.2026, with the reference number ("**MSz/32/2026**") in the subject line.

Required documents:

1. The scientific CV, including the progress in the university studies, scientific achievements (publications, participation in research projects and conferences), with the clause "I agree to the processing of my personal data contained in the application documents for the purposes necessary for the implementation of the process recruitment by Center for Theoretical Physics PAS".
2. Cover letter.
3. A copy of the Master's degree diploma or an official certificate issued by the relevant higher education institution confirming the award of a Master's degree. In the case of candidates who have not yet obtained their Master's degree by the application deadline, a document issued by the relevant higher education institution confirming the current stage of the process leading to the award of the degree (e.g. a scheduled date for the Master's thesis defence) must be submitted. Employment is conditional upon providing a document

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confirming the award of the Master's degree no later than before the employment start date.
4. Additional copies of documents confirming scientific or professional achievements (optional).
5. At least one letter of recommendation from a researcher with at least a PhD degree, concerning the candidate and his/her current scientific activity.
6. A signed personal data protection statement (link to the applicable clause).

Only shortlisted candidates will be contacted.

How we recruit

We carefully review every submitted application. Those whose experience and competencies align with our needs and requirements are invited to an interview (usually held online).
We stay in touch with candidates throughout the entire process, ensuring that interviews take place in a friendly atmosphere, and providing feedback after the interviews. We approach each candidate individually, also considering the needs of people with disabilities.
We appreciate all feedback received after the recruitment process. It motivates us to improve our recruitment efforts.

Our commitment to Equality, Diversity and Inclusion

The CTP PAS operates in an all-inclusive environment irrespective of personal, physical, or social characteristics. Teamwork is highly valued, individual strengths are recognised and appreciated, and we are committed to advancing the careers of everyone.
Equality, respect, and openness are fundamental values in an academic environment, where diversity is essential. We strive to provide a safe and inclusive space for everyone who is part of our scientific community.
The CTP PAS has regulations for reporting violations of law and protection of whistleblowers.