

## FORM FOR EMPLOYERS

INSTITUTION Center for Theoretical Physics, Polish Academy of Sciences.....

CITY Warsaw.....

POSITION scholarship-student .....

DISCIPLINE physics.....

POSTED .....2024-05-23.....

EXPIRES ...2024-05-31.....

WEBSITE [www.cft.edu.pl](http://www.cft.edu.pl)

KEY WORDS: hard spheres, quasi-one-dimensional channel, partition function,  
quantum droplets

DESCRIPTION (field, expectations, comments):

The Director of the Center for Theoretical Physics, Polish Academy of Sciences (CFT PAN), announces a competition for a student scholarship at CFT PAN as part of the POLONEZ BIS research project "Quasi-one-dimensional, solvable models of interacting hard spheres and their implications for ultra-cold quantum gases" funded by the National Science Center (registration number: 2022/45/P/ST3/04237). The project is led by Dr. Victor Pergamenschchyk, with Dr. hab. Krzysztof Pawłowski acting as the project mentor.

The aim of the project is to investigate interacting atoms in an elongated, spindle-shaped trap, considering non-local forces between atoms. A significant part of the literature based on simplified models predicts a phase transition from gas to quantum liquid in this system. Although quantum droplets in 3D have been well studied, this transition in quasi-1D has not yet been experimentally confirmed. Moreover, theoretical predictions have not yet been supported by ab initio calculations. In this project, we aim to further investigate the scattering process of atoms to calculate true scattering lengths and compare our predictions with the "hard-spheres" model and simple strictly 1D models. If the project is successfully implemented, further research on droplet formation is anticipated. For this purpose, we will seek solutions to the quantum many-body system methods, in collaboration with other group members.

**Scholarship: approx. PLN 1,500 – 1,700 per month.**

**Duration: max. up to one year.**

**Formal requirements:**

1. Scientific resume that includes the course of studies and any scientific achievements (publications, participation in research projects, conference presentations), supplemented with the clause, *“I consent to the processing of my personal data necessary for the recruitment process in accordance with the Regulation of the European Parliament and of the Council (EU) 2016/679 of April 27, 2016, on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (GDPR).”*
2. Cover letter.
3. Completed personal questionnaire [<https://www.cft.edu.pl/nauka/praca-w-cft>].
4. Signed GDPR clause [attachment].
5. Recommendation letter from the academic supervisor.
6. Certificate of student status for bachelor's/master's/integrated master's degree studies.

**From candidates, we expect:**

1. Excellent knowledge of programming in C/C++ or Python,
2. Ability to learn new techniques quickly,
3. Independence, analytical thinking, and creativity in problem-solving,
4. Experience in solving many-body quantum mechanics equations is an advantage.

Documents should be submitted electronically to the email address: [rekrutacja@cft.edu.pl](mailto:rekrutacja@cft.edu.pl) by **May 31, 2024**. Please indicate the **reference number of the announcement in the email subject: VP/07/2024**.

If there are many candidates, some will be invited for an interview, which will take place in the first week of June (June 3, 2024, to June 7, 2024). **The competition results will be announced by June 15, 2024**. Candidate applications will be evaluated according to the guidelines of the National Science Center:

[https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2024/uchwala25\\_2024-zal1.pdf](https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2024/uchwala25_2024-zal1.pdf)

Candidates will be notified of the competition results electronically. The collaboration under the scholarship is expected to begin no later than **July 1, 2024**.

For any questions, please email: [pawlowski@cft.edu.pl](mailto:pawlowski@cft.edu.pl)

**Information Clause – Job Recruitment**

**Information Obligation under the Article 13 of the RODO \*:**

**1. Data Administrator**

The administrator who is a deciding entity on how your personal data will be used is the Center for Theoretical Physics PAN represented by the Director with the seat in Warsaw Al. Lotników 32/46. You can contact the Administrator by using one of the contact forms available on the website: : <http://www.cft.edu.pl/>

**2. Data Protection Inspector**

The Director of the Center for Theoretical Physics of the Polish Academy of Sciences has appointed the Data Protection Inspector (Inspektor Ochrony Danych - IOD) with whom you can contact in all matters relating to your personal data. You can contact the Inspector by sending an email to: [iod@cft.edu.pl](mailto:iod@cft.edu.pl)

**3. The Purposes of Processing and the Legal Basis for Processing**

Your personal data will be processed for the purpose of running the current recruitment. The basis for the processing of personal data are the provisions of the Labor Code Act of June 26, 1974 (uniform text: Dz. U. of 2018, item 917) and based on your consent for data processing.

**4. The Period of Storage of Personal Data**

Your personal data will be kept for the duration of the present recruitment.

**5. Data Recipients\*\***

The recipients of your personal data will be only entities authorized to obtain personal data on the basis of the law. Access to your data is provided only to employees authorized by the administrator and associates who must have access to the data to perform their duties.

**6. Your Processing Rights**

You have the right to access your data and the right to correct it or limit processing, as well as the right to appeal against the processing.

**7. The Obligation to Provide Data and the Consequences of not Providing Data**

Providing your personal data specified in the Labor Code is obligatory, and for the remaining extent voluntary.

**8. The right to make a complaint to the President of the Office for the Protection of Personal Data**

When you feel that the processing of personal data violates the provisions of the general regulation on the protection of personal data, you have the right to make a complaint to the President of the Office for the Protection of Personal Data.

**Consent to Data Processing**

**I consent to the processing of my personal data by the Center for Theoretical Physics PAN for the needs of:**

- Present recruitment.

I provide the data voluntarily and I declare that they are truthful. I got acquainted with the contents of the above information, including information about the purpose and methods of processing personal data and the right to access my data and the right to correct them.

.....  
date, signature of the candidate

\* Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46 / EC (general regulation on data protection)