



## **Postdoctoral Programme in Data Processing and Analysis in the JUNO Experiment**

**12-month contract**, renewable for another max. 24 months

### **Your mission**

The main objective of the position is to take part in the data analysis of the JUNO experiment, including JUNO and TAO detectors with the global goals including precision measurement of neutrino oscillation parameters, determination of neutrino mass ordering; search for the physics beyond the Standard Model with 2-3 years of JUNO data and 10 years of the publicly available Daya Bay data, including either search for neutrino decay, search for Non-Standard Interactions, or search for light Dark Matter.

### **Your tasks**

You will work with our analysis group. Your research programme will be focused on:

- Study and measurement of background contributions to inverse-beta decay signals in JUNO and TAO detectors, including:
  - accidental coincidence backgrounds;
  - background from long-living isotopes of  ${}^9\text{Li}$  and  ${}^8\text{He}$ ;
  - fast and double neutrons;
  - sequential  ${}^{210}\text{Bi}/{}^{210}\text{Po}$  decays.

The priorities and actual focus of studies will be motivated by the analysis landscape during the programme.

- Contribute to the main oscillation analysis of the JUNO and TAO data.
- Using the tools, developed for the data analysis of the JUNO, TAO and Daya Bay experiments, perform analyses beyond the Standard Model, including:
  - Search for neutrino decay in reactor neutrino data in JUNO, with TAO and Daya Bay constraints of reactor antineutrino spectrum.
  - Search for Non-Standard interactions in reactor neutrino data in JUNO, with TAO and Daya Bay constraints of reactor antineutrino spectrum.
  - Search for Ultralight Scalar Dark Matter in the publicly available data of the Daya

Bay experiment.

- Support and maintain the public model of the Daya Bay experiment.
- Supervise undergraduate and PhD students within the aforementioned program.

## Constraints and risks

The candidate is expected to undertake international business trips for periods varying from 1 to 4 weeks per year. Shift work and work on weekends may be necessary, remote work is allowed.

Depending on your citizenship, you may need to obtain a visa and this process can last several months. JINR offers all the necessary support for obtaining the entry permit for the Russian Federation.

## Your profile

- Highly motivated candidate with a PhD (obtained less than 5 years ago) in neutrino physics.
- Age under 40, have not had more than 3 temporary positions.
- Strong background in experimental physics and data analysis is a prerequisite.
- Practical experience in data analysis, including event selection, energy response characterization and statistical analysis would be advantageous.
- As an international intergovernmental research organization, we are particularly keen to ensure that we also attract applicants from outside Russia. You must have a good knowledge of English and be willing to learn Russian (a language course will be paid for by JINR).

*\* Winners of last year's JINR Postdoctoral Programme and JINR Fellowship Programme who were previously employed at JINR are not eligible to participate in the contest again, as current JINR employees.*

*Candidates from JINR Member States are considered for employment at the Institute by nomination from JINR Member States Plenipotentiary Representative.*

## What we offer

### High quality of life

Called the "Island of Stability", the city of Dubna is ideally located on the bank of Europe's largest waterway — the Volga River (only 2.5 hours from Moscow by train or bus and 1.5 hours by car from Sheremetyevo International Airport). It is important for us that our employees quickly and easily adapt to the new living conditions and have a healthy work-life balance. Therefore, we offer accommodation in comfortable guest-house rooms (for singles), or fully furnished flats owned by JINR, and annual paid leave.

### Prospects

We guarantee you a **12-months postdoctoral contract, renewable for another max. 24 months (36 month in total)**, in a multicultural scientific environment.

### Remuneration

2300 USD per month (paid in Russian rubles at the planned exchange rate (forecasted year-average, adopted in the JINR budget for the current year, which is fixed on the date of conclusion of the contract and valid throughout its entire term). In 2026, the exchange rate is 92.2 Russian rubles per 1 USD.\*

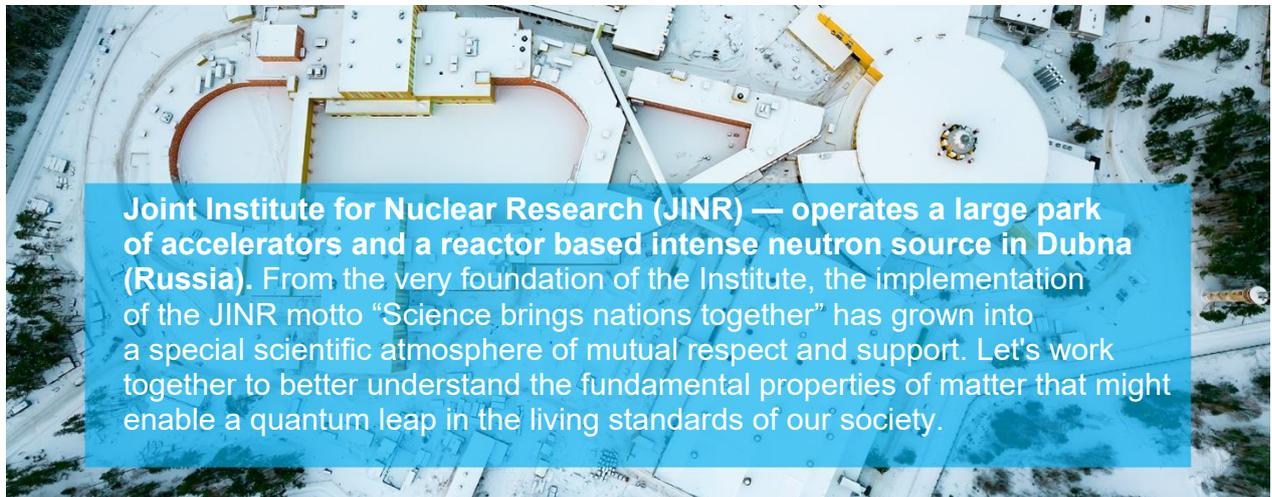
Income tax of 13% is applied. The employer shall pay no pension insurance.

\*The average per capita income in the Moscow region is 110 thousand rubles.

## Benefits

We offer considerable social benefits: annual paid leave of 42 calendar days with an additional one-time payment of 50 % of your monthly salary after one year of work, air fare (except for family members) at the beginning and the end of the employment period in case the terms of the contract are fulfilled, accommodation (50 %, without cost of utilities and furniture rental), free local health insurance for you and your family members, relocation assistance (reimbursement of the cost of excess baggage and transfer from/to airport at the beginning and end of the contract for all family members). We also offer free Russian courses and subsidies for the use of JINR sports infrastructure (Olympic swimming pool, stadium, gym, climbing wall, etc.), as well as access to a variety of cultural activities.

Apply now



[jinr.int](http://jinr.int) | [telegram](#) | [twitter](#)