



## **Postdoctoral Programme in Rare Mode Fission Processes**

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

### **Your mission**

The primary goal of this role is to investigate the processes of ternary and quaternary fission, both in cases of spontaneous fission and fission induced by neutrons. Our research team has already conducted experiments with  $^{252}\text{Cf}$  and is currently in the process of analyzing the collected data. We are actively searching for a motivated candidate who can apply theoretical methods to interpret the outcomes of this experiment. This will allow to theoretically explain our results and compare existing ones. Furthermore, the selected candidate will be responsible for data analysis and simulation of experiment in GEANT. These simulations will aid in identifying and quantifying background events resulting from other neutron and gamma-ray interactions. Ultimately, this work will enable us to accurately determine the yields of ternary and quaternary particles.

### **Your tasks**

You will work with our group (nuclear fission). Your research programme will focus on:

- Analysis of data using C++ or ROOT based scripts.
- Simulation of the experimental setup and experiment in GEANT .
- Applying theoretical methods to interpret the outcomes of this experiment.
- Participation in conferences.
- Writing reports and scientific articles.

### **Constraints and risks**

The candidate is expected to undertake international business trips for periods varying from 1 to 4 weeks. 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 physics, nuclear physics or in a similar field.
- Age under 40, have not had more than 3 temporary positions.
- Strong background in theoretical nuclear physics, simulation in GEANT and data analysis is a prerequisite.
- Practical experience in nuclear physics and semiconductor detectors would be advantageous.
- As an international intergovernmental research organization, we are particularly keen to ensure that we also attract applicants from outside of Russia. You must have good knowledge of English and be willing to learn Russian (a language course will be provided by JINR).

### 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), which is adopted with the JINR budget for the current year. In 2023, the exchange rate is 69.2 Russian rubles per 1 USD.

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

#### Benefits

We offer considerable social benefits: settling-in allowance, air fare (except for family members), free local health insurance for you and your family members, relocation assistance (under certain conditions), free public school or kindergarten attendance for children. We also offer free Russian courses and subsidies for the use of JINR sports infrastructure (Olympic swimming pool, stadium, gym, etc.), as well as access to a variety of cultural activities.

**Apply now**



**Joint Institute for Nuclear Research (JINR)** — operates a large park of accelerators and a reactor based intense neutron source in Dubna (Russia). From the very foundation of the Institute, the implementation of the JINR motto “Science brings nations together” has grown into a special scientific atmosphere of mutual respect and support. Let's work together to better understand the fundamental properties of matter that might enable a quantum leap in the living standards of our society.

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