

## JINR Newsletter #28, 31 July 2024

Dear colleagues and friends,

This week, a representative of the governor and government of Primorsky Krai visited Dubna to get acquainted with JINR and discuss issues of training highly qualified personnel.

About 80 specialists in theoretical and mathematical physics gathered at JINR for SQS'24, a workshop on supersymmetries and quantum symmetries.

In the latest issue of the JINR Newsletter, you can also read about an annual conference of the Institute's Association of Young Scientists and Specialists held on Lipnya Island, new scientific publications, and JINR's creative and sports activities.



### Cooperation

#### Educational cooperation deepening between JINR and Primorsky Krai

Chief of Staff to the Governor of Primorsky Krai and the Government of Primorsky Krai Dilyara Malkova visited JINR on 29 July. A meeting took place at the Institute's Directorate to review the achievements of the cooperation and discuss issues of joint work in training highly qualified personnel.



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### Conferences

#### International workshop on supersymmetries and quantum symmetries at BLTP at JINR

On 29 July, more than 80 specialists in theoretical and mathematical physics gathered for the biennial workshop titled "Supersymmetries and Quantum Symmetries" (SQS'24). The event, held in hybrid format in Russian and English, will last until 3 August.



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#### Lipnya-2024: rewind

On 19–21 July, the 28th AYSS Youth Summer Scientific School took place on Lipnya Island. 55 young researchers and specialists networked, heard lectures, and enjoyed sports and cultural activities. Please enjoy the article about the event with the comments by its participants.

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### Publications

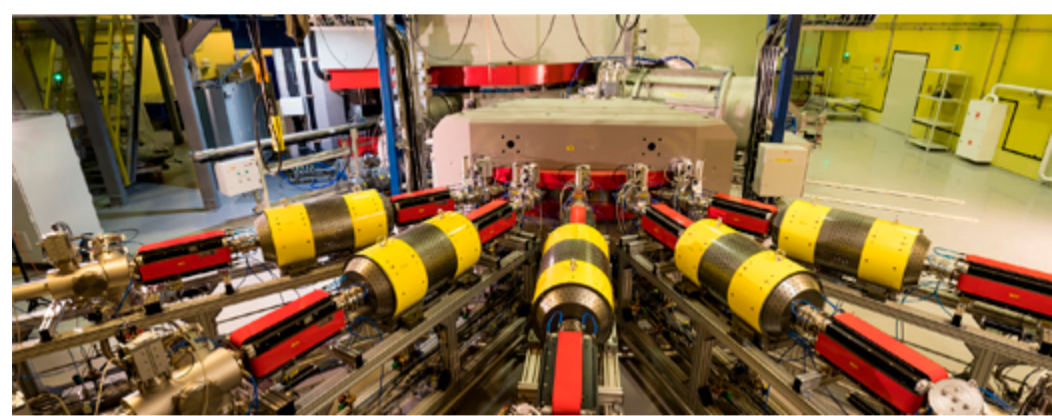
#### Signal classification algorithms for MRPC with DRS4 readout

As part of their participation in the NA61/SHINE International Experiment at CERN, researchers of VBLHEP at JINR carried out a study on methods of analysing waveforms produced by the Multigap Resistive Plate Chambers. The paper was [published](#) in the *Journal of Instrumentation*.

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#### Synthesis and decay properties of isotopes of element 110: $^{273}\text{Ds}$ and $^{275}\text{Ds}$

In cooperation with researchers from the Czech Republic, China, and Kazakhstan, FLNR and BLTP JINR scientists conducted a study of darmstadtium isotopes at the DGFERS-2 Gas-Filled Separator at the Superheavy Element Factory. An article reviewing its results was [issued](#) in *Physical Review C*.



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#### Change in superparamagnetic state induced by swift heavy ion irradiation in nano-magnetite

FLNR JINR scientists [presented](#) the results of their research on the effect of swift heavy ion irradiation on the superparamagnetic state of magnetite nanoparticles. The study was conducted in partnership with colleagues from MEPhi and the universities of the Czech Republic, Hungary, and Japan.

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#### FLNP JINR researchers studied fertilisers' impact on grassland in northeastern Romania

The research of the effects of 14 elements was done together with colleagues from a number of Romanian research institutions. The full text of the article presenting the results is available [via the link](#).

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#### Study on hindrance to complete nuclear fusion

Scientists from BLTP at JINR, in cooperation with Uzbekistan colleagues, studied the effect of the charge asymmetry and orbital angular momentum in the entrance channel on the hindrance to complete nuclear fusion of atomic nuclei. The work was [published](#) in *Physical Review C*.

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#### Development of scintillation detector for IREN Facility

Scientists from JINR and research centres of Azerbaijan, the Czech Republic, and Kazakhstan engineered a neutron/gamma detector for the accelerator-driven Intense Resonance Neutron Source (IREN) Facility. The full text detailing the results was [published](#) in *Nuclear Engineering and Technology*.

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#### Review of Particles & Nuclei, #4 (Vol. 55) 2024

Please enjoy the review of the fourth part of this year's volume of *Physics of Elementary Particles and Atomic Nuclei* that publishes the articles with results of the original theoretical, experimental, scientific and technical, methodical, and applied research.

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#### Review of Particles & Nuclei, Letters, #4 2024

The JINR Publishing Department has released the fourth issue of *Physics of Elementary Particles and Atomic Nuclei, Letters*, a journal constituting review articles by leading physicists from the JINR Member States and scientists from all over the world.

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### Announcements

#### JINR employees invited to supervise students in International Internship

The UC JINR invites the Institute's employees willing to supervise students in the second stage of the internship, which will take place on 9–27 September. You can submit your research project and note the number of students you are willing to supervise until 13 August to [ramzdorf@jinr.ru](mailto:ramzdorf@jinr.ru) and [karпова@jinr.ru](mailto:karпова@jinr.ru).



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#### Master's course in accelerator physics

Enrolment deadline is approaching at Moscow Engineering Physics Institute for three Master's courses for future accelerator physicists working at megascience facilities. You can submit documents online until 3 August [via the link](#).

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#### International physics conference to take place in Moscow

On 22–25 October, Moscow Engineering Physics Institute will hold the 7th International Conference on Particle Physics and Astrophysics. The event will discuss the latest experimental results and provide the opportunity for participants to network. You can register until 10 September [via the link](#).

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#### Shoot Science competition

The Nauka TV channel invites everyone interested to participate in Russia's biggest competition of photos and videos showcasing science. You can submit your entry [via the website](#) until 2 September.

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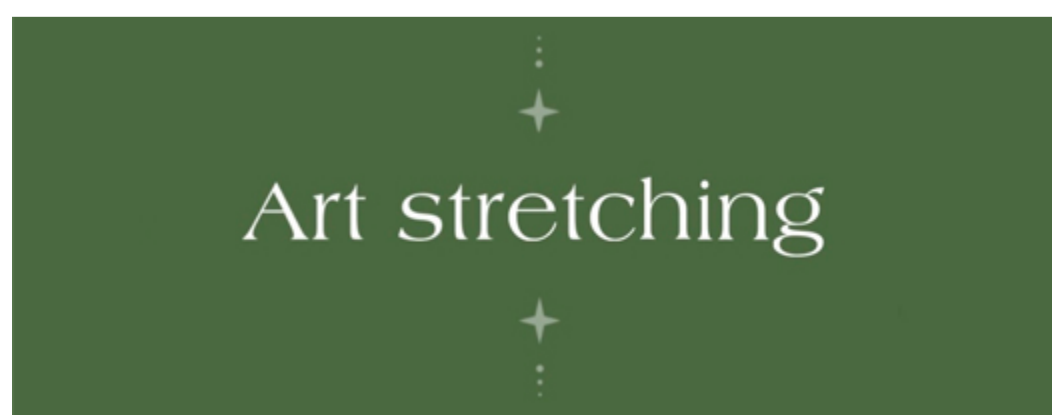
#### Running competition

The JINR Nauka Stadium invites everyone interested to the annual summer competition, which will take place on 11 August. The event includes races for children, adults, and families. You can register [via the link](#) until 9 August.

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#### Stretching studio to open at Mir Centre

The JINR Mir Cultural Centre invites women over 18 to the *Art Stretching* Studio, which will open on 16 August. The classes will be conducted by Ekaterina Byistrova based on her own technique combining different types of stretching with elements of yoga.



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### Upcoming Events

#### Conferences

- [21 July – 5 August. Element 105 Workshop, JINR Volga Recreation Centre](#)
- [29 July – 3 August. International Workshop "Supersymmetries and Symmetries – SQS'24", JINR, Dubna](#)

#### Seminars

- [1 August, 11:00 AM, DLNP "Precision measurement stand for studying the properties of 5 mm straw tubes for the COMET Experiment" by Vladimir Kalinnikov, Elena Velicheva and Basar Sabirov](#)
- [5 August, 11:00 AM, BLTP "Competing Magnetic Interactions in the Antiferromagnetic Topological Insulator  \$\text{MnBi}\_2\text{Te}\_4\$ " by Pavel Maksimov](#)

#### Culture

- [16 July – 1 September. Daily from 1:00 to 7:00 PM \(except Monday\), JINR Mir Cultural Centre. Art exhibition](#)
- [1 August, 7:00 PM, JINR Universal Public Library, Summer Reading List book club](#)
- [2 August, 6:00 PM, JINR Universal Public Library, English speaking club](#)
- [2 August, 6:00 PM, JINR Universal Public Library, JINR Cinema Club](#)

#### Sports

- [3 – 4 August, 10:00 AM, JINR Tennis Courts, 25th Dzhelepov Brothers Tennis Tournament](#)

[ALL JINR EVENTS →](#)