

## JINR Newsletter #34, 11 September 2024

Dear colleagues and friends,

Tomorrow one of the key events starts at the Institute, the JINR Scientific Council (SC). At the 136th JINR SC session, leading researchers from around the world will discuss the scientific projects of the Joint Institute.

This week was full of news. At the recent ARIADNA Collaboration Meeting, the applied research programme of the NICA Complex was established. JINR Vice-Director Latchesar Kostov received the Russian Order of Friendship. The academic year started at the Dubna branch of Moscow State University.

In the latest issue of the JINR Newsletter, you will also find new articles and JINR publications, interesting videos, and much more.



### Governing Bodies

#### 136th session of JINR Scientific Council

The session will take place on 12–13 September in a hybrid format. At the meeting, members of the Council will hear a report by JINR Director Grigory Trubnikov, consider recommendations of the JINR Programme Advisory Committees held in June 2024, and discuss the JINR Topical Plan for 2025.



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### NICA

#### Applied research at NICA Complex discussed in Dubna

From 4 to 6 September, JINR hosted the ARIADNA Collaboration Meeting. The three-day event gathered over 150 specialists from 15 countries. The main goal of the meeting was to discuss the collaboration's scientific programme ahead of the run at the NICA Complex scheduled for 2025.



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#### Construction progress of NICA Collider building discussed at JINR

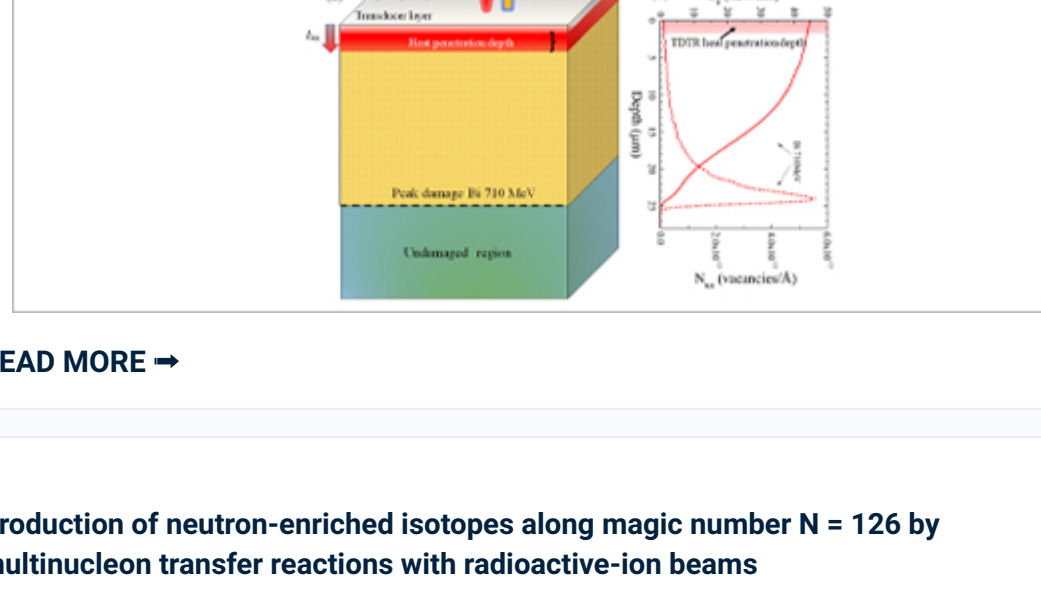
On 3 September, a delegation representing the general contractor for the construction of the NICA Collider building visited the Joint Institute for Nuclear Research. During the visit, the parties discussed prospects for developing cooperation for the successful and timely completion of construction works.

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### Awards

#### Latchesar Kostov receives Order of Friendship

On 9 September, Vice-Director of the Joint Institute for Nuclear Research, Doctor of Physics and Mathematics Latchesar Kostov was awarded for his great contribution to strengthening the Russia-Bulgaria partnership in nuclear energy and the development of intergovernmental cooperation in fundamental and applied research.



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### Conferences

#### SYMPHYS-XIX Conference starts in Yerevan

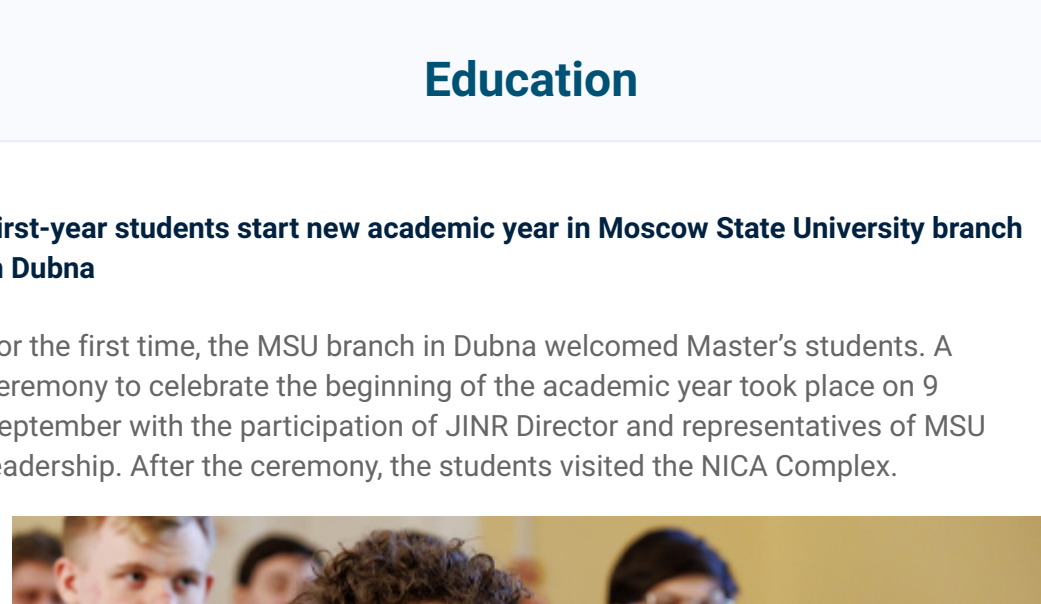
XIX International Conference on Symmetry Methods in Physics (SYMPHYS-XIX), organized jointly by JINR and the International Centre for Advanced Studies of Yerevan State University, is taking place on 8–13 September. The event commemorates the outstanding scientist, Academician of the Russian Academy of Sciences Alexei N. Sissakian.

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### Research

#### Impact of swift heavy ion-induced point defects on nanoscale thermal transport in ZnO

The research [published](#) in *Materials Research Bulletin* was conducted by employees of the Laboratory of Nuclear Reactions at JINR and researchers from the scientific centres of Kazakhstan and South Africa. The findings lead to new approaches to developing functional materials using heavy ion irradiation.



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#### Production of neutron-enriched isotopes along magic number $N = 126$ by multinucleon transfer reactions with radioactive-ion beams

The study was carried out by Vyacheslav Saiko and Alexander Karpov, scientists from the Laboratory of Nuclear Reactions at JINR, and [published](#) in *Physical Review C* in June 2024.

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#### Study of etching features of quartz glass irradiated with xenon ions

The article was co-authored by Head of the FLNR JINR Applied Physics Centre Pavel Apel and scientists from the Lebedev Physical Institute (LPI) and the National University of Science and Technology. The results of the work were [published](#) in the LPI bulletin.

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#### Burn-in test and thermal performance evaluation of silicon photomultipliers in TAO Experiment

*Journal of Instrumentation* issued an [article](#) by employees of the Methodical Research Sector of the Laboratory of Nuclear Problems at JINR Nikolay Anfimov and Arseniy Rybnikov and Chinese researchers. The team of scientists conducted comprehensive tests of SiPM tiles for the JUNO-TAO Experiment.

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#### CRIC Information System to integrate computing centres for processing SPD NICA data

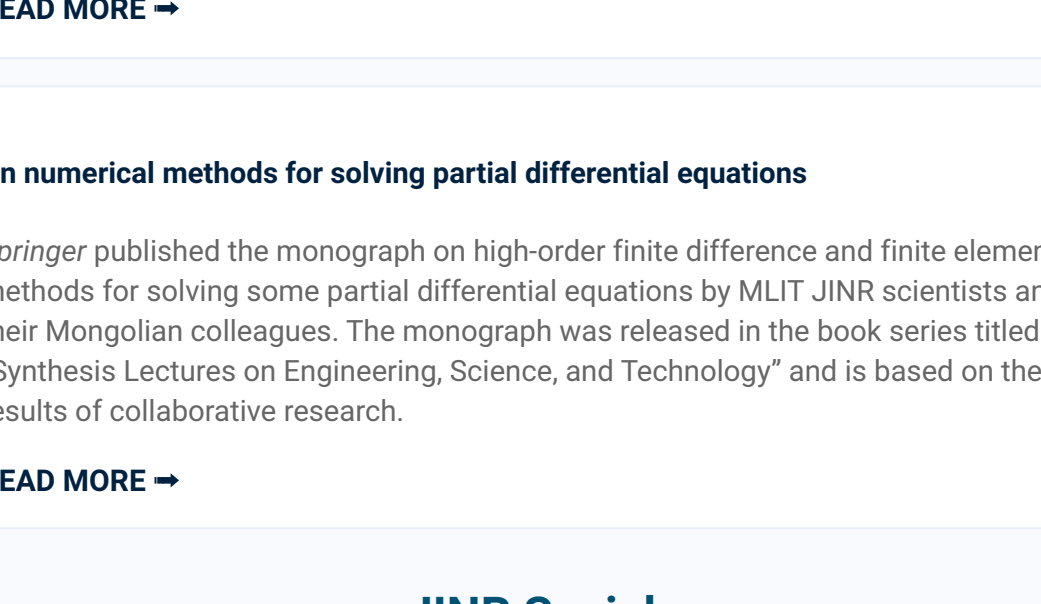
Researchers from Budker Institute of Nuclear Physics together with JINR employees developed the CRIC (Computing Resource Information Catalog) Information System, one of the key components for building a distributed system for processing experimental data from the SPD Experiment at the NICA Accelerator Complex.

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### Education

#### First-year students start new academic year in Moscow State University branch in Dubna

For the first time, the MSU branch in Dubna welcomed Master's students. A ceremony to celebrate the beginning of the academic year took place on 9 September with the participation of JINR Director and representatives of MSU leadership. After the ceremony, the students visited the NICA Complex.



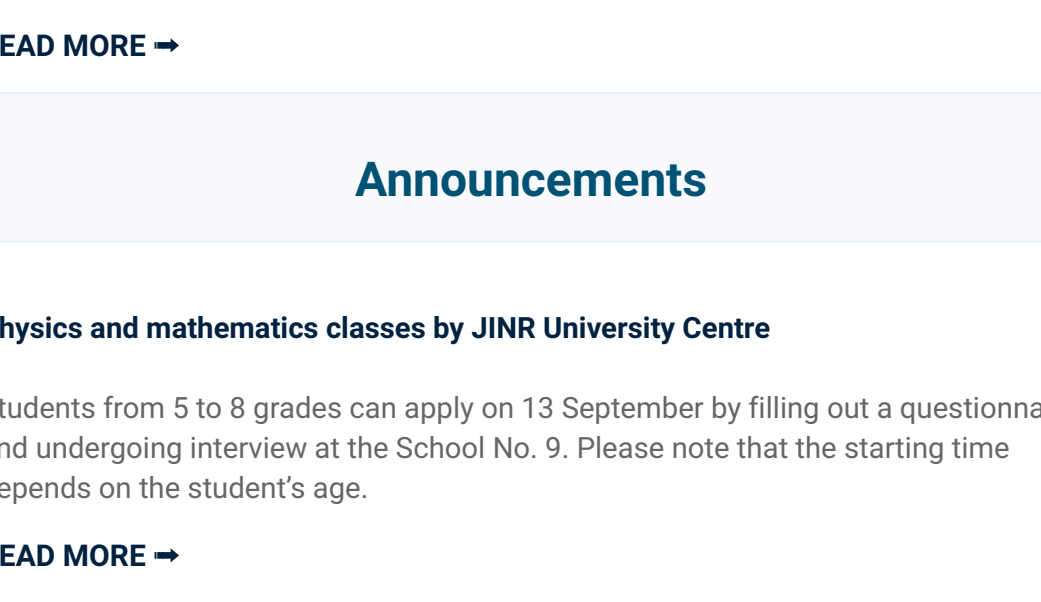
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### Publications

#### JINR News bulletin #3 2024 issued

The third issue of the 2024 JINR News bulletin has been published. It provides information on new scientific results obtained at the JINR Laboratories, progress in performance of large-scale experiments, and the JINR social life.



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#### History of nuclear spectroscopy at JINR

The JINR Publishing Department issued a book entitled "Department of Nuclear Spectroscopy and Radiochemistry, 1958-2005: Memories, Documents, and Photos" compiled by Tsvetan Vylov and his colleagues. The collection introduces the reader to the life of several generations of scientists and the department's achievements in nuclear spectroscopy.

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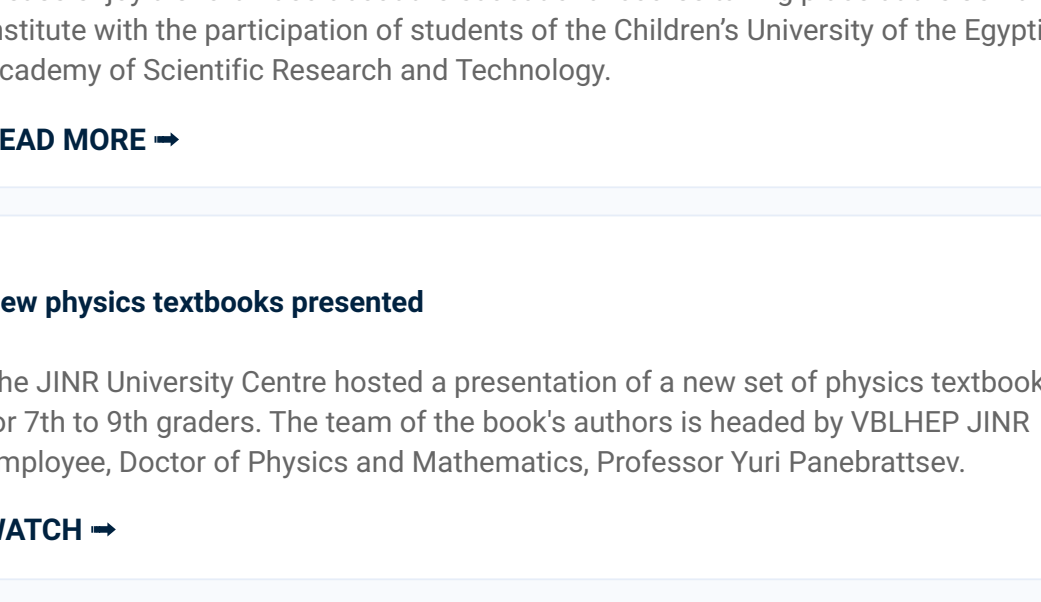
#### Review of Particles & Nuclei, #5 (Vol. 55) 2024

Please enjoy the review of the fifth 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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#### About new developments of Newton-type iterations for solving nonlinear problems

The monograph by MLIT JINR Deputy Director, Academician of the Mongolian Academy of Sciences (MAS) Ochbadrakh Chuluunbaatar and JINR Honorary Doctor, MAS Academician Tugal Zhanlav explores higher-order iterations for nonlinear equations and their systems, their applications in linear algebra, and some nonlinear problems of theoretical physics.



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#### On numerical methods for solving partial differential equations

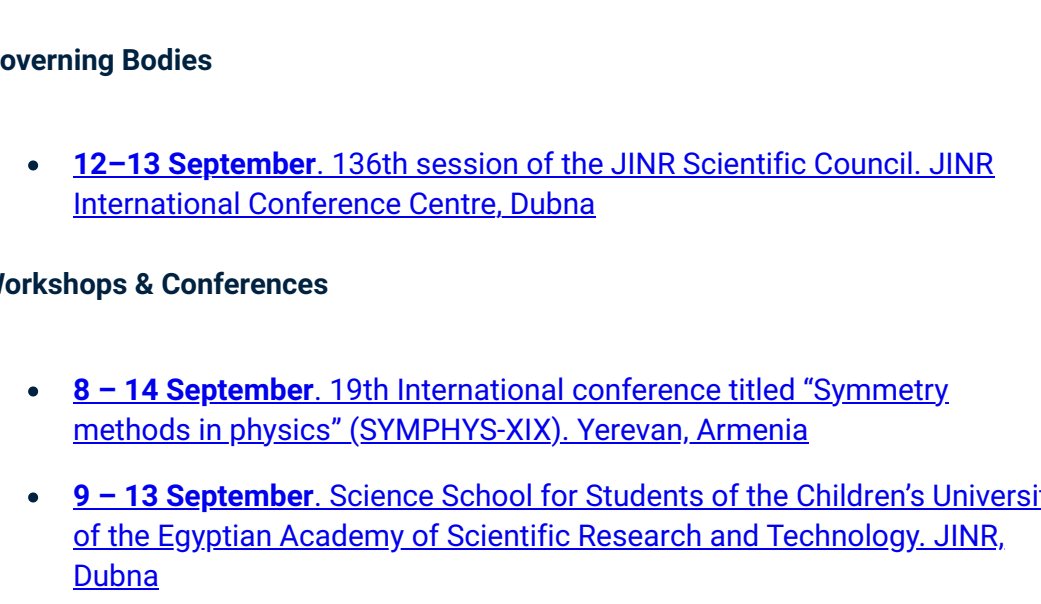
*Springer* published the monograph on high-order finite difference and finite element methods for solving some partial differential equations by MLIT JINR scientists and their Mongolian colleagues. The monograph was released in the book series titled "Synthesis Lectures on Engineering, Science, and Technology" and is based on the results of collaborative research.

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### JINR Social

#### JINR at MEPhI Nuclear Festival

6–8 September marked the second Nuclear Festival, organized by MEPhI in partnership with the Joint Institute, Rosatom, Moscow State University, and Kurchatov Institute. Over 30 JINR employees took part in popular science, engineering, music, and sports activities. LRB and DLNP JINR researchers Iurii Severiukhin and Mark Shirchenko read lectures.



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### Announcements

#### Physics and mathematics classes by JINR University Centre

Students from 5 to 8 grades can apply on 13 September by filling out a questionnaire and undergoing an interview at the School No. 9. Please note that the starting time depends on the student's age.

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#### Track and field run in memory of Academician Veksler

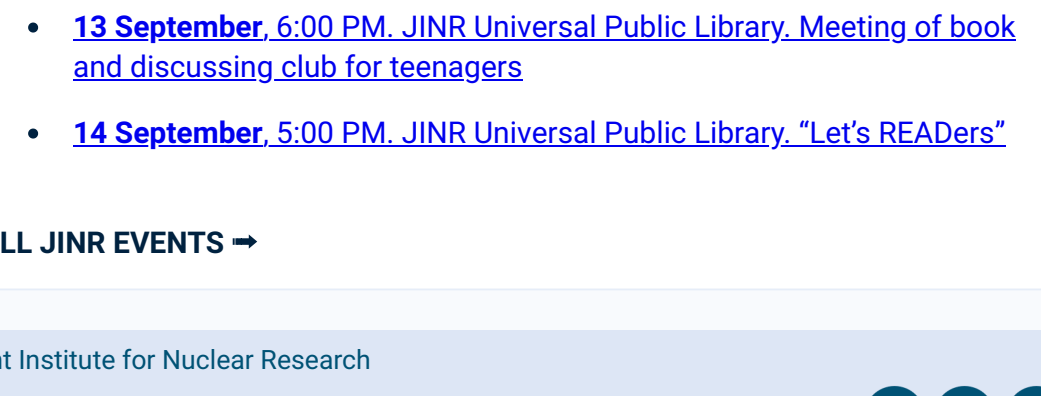
The 55th annual run in memory of the outstanding Soviet physicist Vladimir Veksler will take place on 22 September. Registration is required until 18 September [via the link](#).

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### Media

#### Series of articles to mark DLNP JINR anniversary

14 December 1949, the launch day of the world's largest synchrocyclotron, is considered the founding date of DLNP at JINR. If you haven't yet seen the series of articles about the history of this unique facility and the laboratory's discoveries and researchers, please enjoy reading it.



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#### JINR hosts science school for Egyptian schoolchildren

Please enjoy a short video about the educational course taking place at the Joint Institute with the participation of students of the Children's University of the Egyptian Academy of Scientific Research and Technology.

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#### New physics textbooks presented

The JINR University Centre hosted a presentation of a new set of physics textbooks for 7th to 9th grades. The team of the book's authors is headed by VBLHEP JINR employee, Doctor of Physics and Mathematics, Professor Yuri Panebratsev.

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#### A day in JINR life

On 5 September, the JINR Telegram channel published a post featuring an archive photograph with an eminent physicist, Harvard University Professor Norman Foster Ramsey taken exactly 61 year ago, on 5 September 1963. Please enjoy the photo and its description.

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#### Video about main JINR events

We offer you to watch a video review of highlights from the life of the Institute.

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#### JINR Weekly Newspaper issued

A new issue of the JINR Weekly Newspaper #34 has been published. Please note that you can read an English version on the JINR Newspaper's website.

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### Upcoming Events

#### Governing Bodies

- **12–13 September.** [136th session of the JINR Scientific Council, JINR International Conference Centre, Dubna](#)

#### Workshops & Conferences

- **8 – 14 September.** [19th International conference titled "Symmetry methods in physics" \(SYMPHYS-XIX\), Yerevan, Armenia](#)
- **9 – 13 September.** [Science School for Students of the Children's University of the Egyptian Academy of Scientific Research and Technology, JINR, Dubna](#)
- **10 – 13 September.** [2nd China-Russia Joint Workshop on NICA Facility, Qingdao, China](#)
- **15–19 September.** [China-JINR Workshop on Software and Computing for Future HEP Experiments, Listvyanka Village, Russia](#)
- **15–20 September.** [15th International Seminar on Problems of Charged Particle Accelerators in memory of Professor Vladislav Sarantsev, Dubna Resort Hotel, Crimea](#)

#### Seminars

- **12 September, 11:00 AM.** [VBLHEP "KRION-N, electron string ion source for NICA Accelerator Complex" by Alexander Ramzdorf and "Development of Nuclotron and Booster power systems" by Alexander Shurygin](#)
- **16 September, 11:00 AM.** [BLTP Journal Club, "Separation of Inverse Aligned Spin-Splitting Effect from Inverse Spin Hall Effect in RuO<sub>2</sub>" by Kaushal Kumar Kesharpu](#)
- **17 September, 11:00 AM.** [BLTP, "Spectral method for solving a time-dependent Schrödinger equation on a non-uniform coordinate grid" by Maxim Zakharov](#)

#### Culture

- **3–29 September.** [Daily from 1:00 to 7:00 PM \(except Monday\), JINR Mir Cultural Centre.](#) [Antigravity exhibition of watercolour landscapes](#)
- **12 September, 7:00 PM.** [JINR Universal Public Library, Summer Reading List book club](#)
- **12 September, 7:00 PM.** [JINR Mir Cultural Centre, Comedy play](#)
- **13 September, 6:00 PM.** [JINR Universal Public Library, English speaking club](#)
- **13 September, 7:00 PM.** [JINR Scientists' Club, Concert by soloists of Moscow Virtuosos Orchestra](#)
- **14 September, from 2:00 PM to 7:00 PM.** [Ratmino Resort Hotel, Back to Office Picnic](#)
- **16 September, 6:00 PM.** [JINR Universal Public Library, Origins of Nanomaterials Lecture](#)
- **18 September, 7:00 PM.** [JINR Mir Cultural Centre, "Classics are fashionable" fashion show](#)

#### For Kids

- **13 September, 6:00 PM.** [JINR Universal Public Library, Meeting of book and discussing club for teenagers](#)
- **14 September, 5:00 PM.** [JINR Universal Public Library, "Let's READers"](#)

[ALL JINR EVENTS →](#)