

Dmitry V. Naumov

Curriculum Vitae

Doctor of Sciences in Physics and Mathematics

Deputy Director, [DLNP JINR](#)

Head, JINR Neutrino Program

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Professional Profile

Dmitry V. Naumov is a physicist working in neutrino physics, astroparticle physics, particle physics, quantum field theory, statistical analysis, astrophysics, and cosmology. His work combines experimental leadership in large international collaborations, theoretical studies of neutrino interactions and oscillations, and long-term teaching and science communication.

At JINR he leads the Neutrino Program and the JINR groups in the Daya Bay and JUNO experiments. He is also active in Baikal-GVD, in theoretical work on quantum-field-theoretical descriptions of neutrino processes, and in the development of educational materials for advanced students and researchers. He is the author of the two-volume textbook [Quantum Field Theory for Experimentalists and Beyond](#).

Education

- **2017** — Doctor of Sciences in Physics and Mathematics, JINR. Dissertation: Measurement of θ_{13} , Δm_{32}^2 , and covariant quantum field theory of neutrino oscillations.
- **2001** — Candidate of Sciences in Physics and Mathematics, JINR. Dissertation: Strange particle production and measurement of Λ and $\bar{\Lambda}$ polarisation in neutrino interactions in the NOMAD experiment at CERN.
- **1997** — Irkutsk State University, Department of Radiophysics and Electronics and Department of Theoretical Physics. Diploma thesis: *Nuclear fusion from molecular states and electron screening in nuclear reactions*.

Professional Appointments

- **Since 2013** — Deputy Director, [DLNP JINR](#).
- **Since 2013** — Head, JINR Neutrino Program.
- **2006–2013** — Head of scientific sector, [DLNP JINR](#).
- **2004–2006** — Foreign researcher, INFN, Italy.
- **2002–2003** — Foreign researcher, LAPP, IN2P3/CNRS, France.
- **1997–2002** — Researcher, [DLNP JINR](#).

Experimental Physics

- **Daya Bay** — JINR group leader. The Daya Bay Collaboration received the [Breakthrough Prize in Fundamental Physics](#) and the [European Physical Society Prize](#).
- **JUNO** — JINR group leader; Executive Board member; Publication Committee member.
- **Baikal-GVD** — leadership of the [NTSim](#) simulation group until 2026.
- **NOMAD** — data analysis and paper writing.
- **EUSO/JEM-EUSO and OPERA** — modelling of neutrino, hadron, and cosmic-ray interactions; simulation and reconstruction software; supervision of students and young researchers.

Theoretical Physics

- Quantum field theory of neutrino oscillations.
- Coherent and incoherent scattering of neutrinos on atomic nuclei.
- Theory of hyperon polarisation in deep inelastic scattering of charged leptons and neutrinos on nucleons.
- Electron screening in nuclear reactions in solar plasma.
- Phenomenology within the Nambu-Jona-Lasinio model.

Teaching, Supervision, and Schools

- Lecturer of the course [Quantum Field Theory](#) at Moscow State University, with about twenty years of teaching experience.
- Lecturer at numerous international and Russian schools in particle physics, neutrino physics, astroparticle physics, and related subjects.
- Supervisor of more than twenty student projects and four PhD dissertations.
- Chair and organiser of the Baikal School on Physics of Elementary Particles and Astrophysics since 2004.
- Chair and organiser of the Baksan School on Astrophysics and Cosmology in 2019.
- Chair and organiser of the Kamchatka School on Physics of Elementary Particles and Astrophysics in 2019.

Books and Educational Materials

- [Quantum Field Theory for Experimentalists and Beyond](#), two-volume textbook, English edition in preparation for publication.
- [Sun and Solar Neutrinos](#), popular-science book, AVANTA, 2023.
- Public lectures, educational videos, interviews, exhibitions, scientific animations, and science-popularisation materials for broad and specialist audiences.

Publication Activity

- More than 200 research papers.
- h-index 51 according to the linked publication record.
- Full publication record: [Papers](#).

Selected Publications

- Daya Bay Collaboration, “Extraction of the ^{235}U and ^{239}Pu antineutrino spectra at Daya Bay”, *Physical Review Letters* **123**, 111801 (2019).
- V. A. Bednyakov and D. V. Naumov, “Coherency and incoherency in neutrino-nucleus elastic and inelastic scattering”, *Physical Review D* **98**, 053004 (2018).
- Daya Bay Collaboration, “Measurement of electron antineutrino oscillation based on 1230 days of operation of the Daya Bay experiment”, *Physical Review D* **95**, 072006 (2017).
- Daya Bay Collaboration, “Study of the wave packet treatment of neutrino oscillation at Daya Bay”, *European Physical Journal C* **77**, 606 (2017).
- Daya Bay Collaboration, “Improved measurement of the reactor antineutrino flux and spectrum at Daya Bay”, *Chinese Physics C* **41**, 013002 (2017).
- D. V. Naumov and V. A. Naumov, “A diagrammatic treatment of neutrino oscillations”, *Journal of Physics G* **37**, 105014 (2010).

Scientific Service

- Member, working group of the Russian Neutrino Program.
- Member, Scientific Council of JINR.
- Member, Scientific Council of [DLNP JINR](#).
- Member, Editorial Committee of *PEPAN Letters*.
- Member, JUNO Executive Board and JUNO Publication Committee.
- Reviewer for *ZhETF*, *European Physical Journal C*, *PEPAN*, and *PEPAN Letters*.

Awards

- [European Physical Society Prize](#), 2023, as a member of the [Daya Bay Collaboration](#).
- [Breakthrough Prize in Fundamental Physics](#), 2016, as a member of the [Daya Bay Collaboration](#).
- JINR Prizes, including awards connected with the NOMAD and Daya Bay experiments.
- [DLNP JINR](#) Prizes in 2001, 2004, 2006, and 2016.
- AYSS JINR Prize and Irkutsk State University Prize, 1997.

Scientific Interests

Neutrino physics; neutrino interactions, oscillations, astrophysical sources, and the nature of neutrino mass; astroparticle physics; cosmic rays; elementary particle physics; the Standard Model and physics beyond it; cosmology; quantum field theory; statistical analysis of experimental data.

Languages

Russian, English, Italian, French; basic German.