

in recognition of his outstanding contributions to nuclear physics and his internationally recognized leadership in the field;
for his pioneering work on strong interactions and heavy-ion physics;
for his key role in the development of major international research infrastructures, in particular the FAIR and CERN facilities;
and for his vision in linking fundamental research with pressing societal challenges, including energy, medicine, and space exploration.



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May 6th, 2026, 15:00
Seminar
Faculty of Physics
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Koszykowa 75,
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Main Auditorium

Frontiers of experimental nuclear physics

Nuclear Physics is going through a moment of extraordinary vitality. The development of our ability to observe the universe, with new "windows" that have opened thanks to new instruments, such as gravitational wave astronomy, has brought with it the need for a leap in the understanding of the nuclear processes underlying many essential aspects of the universe. At the same time, new infrastructures allow nuclear physicists to carry out experiments that were unthinkable even just a short time ago. New accelerators have just opened or are opening a bit all over the world, and others are close to being completed. In particular the international center FAIR, a major new accelerator complex dedicated to all aspects of Nuclear physics is approaching completion near Darmstadt, Germany. The study of the structure of hadrons and nuclei, particularly through modern "Rutherford experiments," in which very high-energy electrons probe the depths of protons and neutrons, is also about to make a momentous leap, with the opening of a dedicated accelerator at Brookhaven. The study of strong interactions in complex systems is a story in itself, having started as a niche sector between nuclear physics and high-energy physics and now an integral part of the research program of all experiments at the LHC.

At the same time, a new awareness of the role of nuclear physics is developing in society: the need to produce energy while minimizing CO_2 emissions has brought attention back to nuclear energy, both fission and fusion, the use of nuclear techniques in medicine continues to expand with a constant need for innovation, from the production of radioisotopes to tumor therapy. Space exploration has also returned to the fore: we dream of trips to Mars, space bases... And again, the need to protect astronauts from radiation has become a central theme.

Nuclear Physics is fundamental to our understanding of the Universe and the fundamental laws of physics and to our quality of life, and the new experimental opportunities that are opening up all over the world allow us to be optimistic about the possibility of responding to these needs. An exciting period is opening up.