

Alexei Norairovich Sissakian 1944-2010

Alexei Norairovich Sissakian, the director of JINR, a member of the Presidium of the Russian Academy of Sciences, a distinguished theoretical physicist and an organizer of scientific research based on broad international co-operation, passed away on 1 May aged 65. He had been elected for his second term as director of JINR in March.



Alexei Sissakian

Alexei Sissakian was born on 14 October 1944 in Moscow. In 1968 he graduated from the physics faculty of the M Lomonosov Moscow State University and started work at the JINR Laboratory of Theoretical Physics in Dubna under the guidance of Nikolay Nikolaevich Bogoliubov. Sissakian's main scientific work concerned elementary particle physics, approximation methods and equations of quantum field theory, the quantization problem of systems with nontrivial geometry, symmetry and topology, and the physics of strong interactions at high temperatures and densities.

In quantum field theory, Sissakian and colleagues offered a new description of processes with large momentum-transfers within the 3D approach to quantum field theory and developed a multicomponent approach in the theory of multiple particle production. Under his guidance seminal investigations in the field of mathematical physics were carried out on classical and quantum superintegrable systems in constant curvature space, as well as on the generation of topologically nontrivial objects. In recent years Sissakian and co-workers dealt with the further development of the method of contraction of Lie algebras applicable for theoretical physics problems.

Studies by Sissakian's research group were widely recognized in one of the most topical problems of particle physics - the development and application of nonperturbative methods in quantum field theory and the development of new approaches to very high multiplicity processes. Under Sissakian's leadership, novel and promising investigations took place to search for processes in the formation of a mixed quark-hadron phase of nuclear matter in heavy-ion collisions. He initiated and led JINR's largest project for the construction of a heavy-ion collider - the Nuclotron-based Ion Collider fAcility (NICA) - to study phase transitions and critical phenomena in nuclear matter ([CERN Courier January/February 2010 p13](#)).

Under Sissakian's leadership a very fruitful collaboration developed between JINR and CERN in preparing many experiments at the Large Electron Positron collider and the LHC. As a member of the ATLAS collaboration, he did much to strengthen the collaboration between JINR and CERN team members.

Sissakian always combined his active research work with pedagogical and organizational activities in science. He supervised 15 theses, was head of the chairs at Moscow Institute of Physics and Technology and Moscow Engineering Physics Institute, was a professor at the M Lomonosov Moscow State University, the vice-president of the International University "Dubna" and had the chair in theoretical physics. In addition he led the scientific seminar "Symmetries and Integrable Systems" at JINR.

Sissakian was the editor-in-chief of **Physics of Particles and Nuclei Letters**, a deputy editor-in-chief of **Physics Particles and Nuclei** and a member of the editorial boards of several scientific publications. He was also a member of specialized scientific councils and programme committees of international conferences and symposia, and the organizer of major international conferences and schools on particle physics.

As vice-director of 1989-2005 and director of JINR since 2006, Sissakian made invaluable contributions towards maintaining and enhancing the potential of the institute, determining its future scientific prospects, improving its research and production capacity, renovating the institute as an open international nuclear physics laboratory, promoting broad co-operation with national and international research and educational centres, and training qualified scientific personnel.

Sissakian was elected a corresponding member of the Russian Academy of Sciences in 2006 and a full member of the academy and a member of its presidium in 2008. As president of the Union of Russian Science Cities, he actively participated in the establishment of science cities. He was also first deputy chairman of the Russian Pugwash Committee under the Presidium of the Russian Academy of Sciences.

Since school age his favourite hobby was poetry. He was the author of several collections of fine poems.

Alexei Norairovich was always distinguished by his dedication to science, by a wonderful combination of great will power with kindness and sympathy to his relatives, friends, colleagues, indeed to all people.

JINR Directorate, his colleagues and friends.