

## Russian Federation sets off celebrations of the centenary of Nikolai Bogoliubov's birth



Bogoliubov

The 2009 International Bogoliubov Conference on Problems of Theoretical and Mathematical Physics was one of the major events in the Russian Federation (RF) to celebrate the centenary of the birth of the Russian physicist Nikolai Nikolaevich Bogoliubov (1909-1992). The conference, which takes place every five years, was held this year on 21-27 August at the Russian Academy of Sciences (RAS) in Moscow and at JINR in Dubna and organized by the RAS, JINR and the Moscow Lomonosov State University (MSU). It was also sponsored by the Russian Foundation for Basic Research, the RF's Federal Agency for Science and Innovation, the Dynasty Foundation and the JINR joint scientific programmes Heisenberg-Landau, Votruba-Blokhintsev and Bogoliubov-Infeld.

Special attractions included a large photo exhibition in both Moscow and Dubna, showing different periods of Bogoliubov's life and scientific career; a presentation of the 12-volume collection of Bogoliubov's scientific works from 2005 to 2009 published by the RAS/Nauka; and a new series of brochures in which well known physicists share their recollections about "Bogoliubov the teacher". An exhibition of his papers and books by and about him was also organized at the JINR library.

Around 300 physicists and mathematicians from leading scientific centres in 30 countries attended the conference. They included scientists of the older generation who were pupils and colleagues of Bogoliubov, as well as young people who have only recently started their careers in mathematics and physics. More than 160 reports were presented, dealing with modern problems in mathematics, nonlinear mechanics, quantum-field theory, elementary particle theory, statistical physics and kinetics.

The conference opened on 21 August - the exact centenary of Bogoliubov's birth - in the presidential hall of the RAS, where Valery Kozlov, vice president of the RAS, welcomed the participants. The first day included plenary talks on non-equilibrium statistical mechanics, new approaches in complex analysis, searches for new physics at the LHC, problems in modern cosmology and form factors in pion physics. During the day, participants paid tribute at Bogoliubov's tomb in Moscow's Novodevichy cemetery and placed flowers. The day ended with the screening of a new

documentary about Bogoliubov. The second day followed with more plenary talks, covering aspects of string theory, mathematical modelling of reactor processes, charged-particle dynamics, the Bogoliubov hierarchy, Navier-Stokes systems and  $N = 4$  supersymmetry.

The conference continued in Dubna on 24-27 August at the Bogoliubov Laboratory of Theoretical Physics. The Dubna session began with a talk by JINR's Director, Alexei Sissakian, titled, "Bogoliubov - Teacher and Master." Afterwards, a plaque dedicated to the great scientist's memory was unveiled on the laboratory wall. Plenary sessions then commenced with the awarding of the N N Bogoliubov Prize for 2006-2008 to Dmitri Shirkov, one of his closest co-workers, and Boris Paton, president of the National Academy of Sciences of Ukraine ([CERN Courier September 2009 p31](#)).

Plenary talks by speakers from several countries covered a range of topics in particle and nuclear physics including: new trends in quantum-field theory; physics at the LHC; neutrino physics and astrophysics; duality and non-perturbative physics in quantum chromodynamics; and the Nuclotron-based Ion Collider Facility and prospects for research with heavy-ion collisions at JINR. Parallel sessions were held on the topics to which Bogoliubov made decisive contributions, and which continue to form the basis of modern fundamental mathematics, mechanics and theoretical physics: mathematics and nonlinear mechanics; quantum-field theory and elementary particle theory; statistical mechanics, kinetics and quantum theory of condensed state of matter; and nuclear physics.

The conference concluded in Dubna on 27 August with the awarding of the prize for the best reports in mathematics and physics among the young scientists (up to age 35). The winners in physics were V Katkov of JINR, for the report "Peculiarities of field emission for carbon nanosheets", and A Bagrov of the RAS Institute of Mathematics, for the report "Critical formation of covered surfaces in collisions of nonextending shock gravitational waves in the de Sitter space". In mathematics the prize was awarded to A Pechen of Princeton University for the report "Dynamics and control of open quantum systems". The awarding of the Bogoliubov Prize 2006-2008 for young scientists (up to age 33) also took place; the winner was I Ivanov of the University of Liege, Belgium, and the RAS Institute of Mathematics, for the cycle of papers "A new approach in the general two-doublet Higgs model".

The centenary celebrations continued in Kiev with a conference at the Bogoliubov Institute of Theoretical Physics of the National Academy of Sciences (NAS) of Ukraine on 15-18 September. A general meeting of the NAS, which was dedicated to the centenary, followed on 21 September. Festive events are also to be held in Nizhny Novgorod and Sarov, at the All-Russian Scientific Research Institute of Experimental

Physics, and a Joint Festive Meeting of the RAS Presidium, the JINR Scientific Council and the MSU Scientific Council will be held in October.