

Lecturers of the Science Summer School
“Relevant Problems in the Theory of the Condensed State”
(Zelenogorsk, 2010)

Professor BORIS ALTSHULER
Columbia University, USA

Altshuler was born 27 January 1955 in Leningrad (now St. Petersburg) in the Soviet Union (now Russia).

He started his undergraduate studies in 1970 in the physics department of Leningrad State University (which also changed its name accordingly) and received his diploma (roughly equivalent to the master's degree in the USA) in 1976. He became a graduate student at the Leningrad Institute for Nuclear Physics that same year and received his candidate's degree there in 1979. He continued to work at that institute until 1989, first as a junior research fellow and later as a senior research fellow.

He moved to the USA in 1989 and joined the faculty of the Massachusetts Institute of Technology. In 1996 he moved to Princeton University, where he was a physics professor until 2007. Since 2007 he has been a physics professor at Columbia University. He has also been a fellow of the NEC Research Institute since 1994.

In 1993 he was awarded a Hewlett-Packard Europhysics Prize (now known as the Agilent Physics Prize) and Edmund Stoner Award and became a Fellow of the American Physical Society. In 1996 he was elected a member of the American Academy of Arts and Sciences and became a member of the National Academy of Sciences USA in 2002.

Professor ALEXANDER BORISOV
Institute of Metal Physics, Ural Branch, RAS

Borisov was born in Sverdlovsk in 1947.

He is a graduate of the Kirov Ural Polytechnical Institute and interned at the laboratory for theoretical physics in the Joint Institute for Nuclear Research in Dubna. Since 1975 he has worked at the Institute of Metal Physics, Ural Branch, RAS (previously, Ural Scientific Center, AS USSR). He received his doctorate in physical and mathematical sciences in 1987 and became a professor in 1989. In 1999 he created and since then has led the laboratory of nonlinear mechanics (currently, nonlinear phenomena).

He is a leading specialist in soliton theory, in the theory of nonlinear phenomena, solitons, and localized structures in condensed matter, and in the features of magnetic media.

His research is connected with developing the inverse scattering method and with using that method to predict and describe nonlinear waves and solitons in quasi-one-dimensional magnets. He recently proposed a differential-geometric method for integrating nonlinear equations and used this method to study two- and three-dimensional spatially inhomogeneous structures in condensed matter.

He is the author of more than 120 scientific papers and monographs and has prepared candidates and doctors of science.

Professor ALEXANDRE BOUZDINE
Université de Bordeaux, France

Bouzdine graduated from the physics department of MSU in 1977 and soon defended his candidate's dissertation on the physics of low-dimensional compounds under L. N. Bulaevskii and I. M. Lifshitz. He defended his doctoral dissertation on the theory of the coexistence of magnetism and superconductivity in 1987. In that year he received the Lenin Komsomol Prize for works on that topic.

He worked and taught in the physics department of MSU and was also invited by A. A. Abrikosov to the theoretical division of the Institute for High Pressure Physics. He has worked at the Argonne National Laboratory (USA), the Center for Low Temperature Physics (now the Néel Institute), the CNRS Grenoble (France), the École Polytechnique Fédérale de Lausanne (Switzerland), Kyoto University (Japan), and the University of Tsukuba (Japan). He has been a full professor at the Université de Bordeaux (France) since 1996 and was

elected to the Institut universitaire de France in 2004, where he chairs the superconductivity department.

He is the author of about 200 scientific papers and monographs and has prepared 20 candidates and doctors of science.

For many years he has been involved in the All-Union Physics Olympiad and was president of the Moscow Physics Olympiad. He is the author of many articles in the journal *Kvant* and was the scientific secretary of the Kvant Library series and assistant editor of the Russian–American journal *Quantum*.

GRIGORY E. VOLOVIK

Helsinki University of Technology, Finland; Landau Institute for Theoretical Physics, Chernogolovka

Volovik was born 7 September 1946 in Moscow, Russia.

He graduated from the Moscow Institute of Physics and Technology in 1970. He has been a member of the Landau Institute for Theoretical Physics since 1973 (as a principal scientist since 1992). At that institute, he defended his candidate's dissertation in 1973 and his doctoral dissertation in 1981. Since 1993, he has been a senior scientist at the Low Temperature Laboratory of the Helsinki University of Technology (Finland).

He was chair of the European Science Foundation Program "Cosmology in the Laboratory" from 2003 to 2006, a divisional associate editor of *Physical Review Letters* from 2006 to 2011, and deputy editor-in-chief of *JETP Letters* since 1991. He was awarded the Landau Prize in 1992 and the Simon Prize in 2004. He became a member of the Finnish Academy of Sciences and Letters in 2001 and a member of German National Academy of Science Leopoldina in 2007. He was a coeditor of the books *Vortices in Unconventional Superconductors and Superfluids* (with R. P. Huebener and N. Schopohl) and *Artificial Black Holes* (with M. Novello and M. Visser). He is the author of more than 340 scientific papers and the monographs *Universe in a Helium Droplet* and *Exotic Properties of Superfluid ^3He* .

Professor KONSTANTIN V. EFETOV

Ruhr-Universität Bochum, Germany

Efetov was born 29 April 1950 in Orenburg, Russia.

He graduated from the Moscow Institute of Physics and Technology in 1973 and was a graduate student at the Landau Institute for Theoretical Physics from 1973 to 1976, where he defended his candidate's dissertation in 1976 under A. I. Larkin. He has worked at that institute since 1976, first as a junior scientist and then as a leading scientist since 1983. He defended his doctoral dissertation there in 1983. He also taught at the Moscow Institute of Physics and Technology from 1982 to 1988. From 1989 to 1993 he was a director of the Max-Planck-Institut für Festkörperforschung in Stuttgart. From 1995 to 1997, he was at the Max-Planck Institut für Physik Komplexer Systeme and has been a professor at Ruhr-Universität Bochum since 1997. He received the Landau–Weizmann Research Prize in 1998.

IGOR MAZIN

Naval Research Laboratory, USA

Mazin is a native of Moscow, Russia.

He graduated from the Moscow Institute of Steel and Alloys (now the National University of Science and Technology "MISIS") in 1977 and did his graduate studies at the Lebedev Physical Institute, RAS, under V. L. Ginzburg, defending his candidate's dissertation in 1983. He has worked at the Institute of Metallurgy, RAS, the Lebedev Physical Institute, RAS, the Max-Planck-Institut in Stuttgart, and the Carnegie Institute in Washington, D.C. He has been at the Naval Research Laboratory since 1998.

He is the author of more than 200 highly cited papers.

See "[Vitaly Ginzburg and High Temperature Superconductivity: Personal Reminiscences](#)" published in *Physica C*, **468**:105–110 (2008).

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IGOR NEKRASOV

Electrophysical Institute, Ural Branch, RAS, Ekaterinburg

Nekrasov graduated with honors from the physical-technical department of Ural State Technical University in Ekaterinburg in 1999, having received special Russian Federation scholarships in 1996, 1997, and 1998, and defended his candidate's dissertation in 2001. He worked at the Institute of Metal Physics, Ural Branch, RAS, from 1999 to 2005. Since 2005 he has been a senior scientist in the Electrophysical Institute, Ural Branch, RAS (Ekaterinburg). He was awarded the S. V. Vonsovskii Prize (2002) and the I. M. Tsidil'skii Prize (2003) of the Ural Branch of the Russian Academy of Sciences. He received grants for young candidates of science from the President of the Russian Federation in 2003, 2005, 2007, and 2009.

His main scientific interests are in the area of strongly correlated electron systems and in the development of first-principle methods for calculating their electron structure (LDA+DMFT and LDA+DMFT+Sk). He is the author of more than 50 scientific papers on the theory of the condensed state.

Professor MIKHAIL SADOVSKII

Electrophysical Institute, Ural Branch, RAS, Ekaterinburg

Sadovskii graduated from the physics department of Ural State University in Sverdlovsk in 1971. He was a graduate student in the theoretical department of the Lebedev Physical Institute in Moscow from 1971 to 1974, defending his candidate's dissertation in 1975. He worked at the Institute of Metal Physics in Sverdlovsk from 1974 to 1987 and defended his doctoral dissertation in 1986. Since 1987 he has led the theoretical physics laboratory in the Electrophysical Institute, RAS, in Ekaterinburg. He has been a professor in the theoretical physics department of Ural State University since 1991.

He was elected a corresponding member of the Russian Academy of Sciences in 1994 and became an academician and member of the Presidium of the Ural Branch in 2003. He received the A. G. Stoletov Prize of the RAS in 2002. He is a member of the Bureau of the Physical Sciences Branch of the RAS and a member of the editorial boards of the [*Journal of Experimental and Theoretical Physics*](#) and [*Physics-Uspexhi \(Advances in Physical Sciences\)*](#).

He became a Fellow of the [*Institute of Physics*](#) (United Kingdom) in 2002.

His main scientific interests are connected with the electron theory of disordered systems (Anderson localization, pseudo-gaps), the theory of metal-insulator phase transitions, and superconductivity theory (disordered superconductors, high temperature superconductivity). He has developed a field theory approach to localization theory, a self-consistent localization theory, and a theory of superconductors located close to the Anderson transition. He has constructed exactly solvable models of the pseudo-gap state and models of the effect of disorder on the structural transition of the Peierls type. Recently, he is developing a generalized dynamical mean field theory in the theory of strongly correlated systems.

He is the author of about 150 scientific works in the area of the theory of the condensed state.

Doctor Phys.-Math. Sci. IGOR SUSLOV

Kapitza Institute for Physical Problems, RAS

Suslov was born in Nizhny Novgorod in 1955.

He graduated from the department of general and applied physics of the Moscow Institute of Physics and Technology in 1978. He was a researcher in the Kapitza Institute for Physical Problems from 1978 to 1980. He became a graduate student in that institute in 1980 and defended his candidate's dissertation on "Localization and the low temperature kinetics of electrons" in 1983. From 1983 to 1994 he worked at the Lebedev Physical Institute. He returned to the Institute for Physical Problems in 1994 and has worked there as a lead scientist since then. He defended his doctoral dissertation on "A theoretical investigation of the Anderson transition" in 1997. He is a laureate of a MAIK Nauka/Interperiodica prize.

He is the author of about 70 scientific papers.

Professor VLADIMIR MINEEV

CEA Grenoble, France

Mineev was born in Moscow in 1945.

He graduated from the Moscow Institute of Physics and Technology. He is a doctor of physical and mathematical sciences, a professor, and a laureate of the Landau Prize of the Russian Academy of Sciences.

He is vice-director of the Landau Institute for Theoretical Physics, RAS, and a department chair in the Moscow Institute for Physics and Technology.

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Professor DANIEL KHOMSKII

Universität zu Köln (Germany)

Daniel Khomskii graduated from MSU in 1962. Starting in 1965, he worked at the theoretical department of the Lebedev Physical Institute, RAS, and defended his candidate's dissertation there in 1969. He defended his doctoral dissertation in 1980. He was a professor at Groningen University in the Netherlands from 1992 to 2003. Since 2003, he has been a guest professor in Cologne (Universität zu Köln), Germany. He is a recently elected Fellow of the American Physical Society.

His main research interests are the theory of strongly correlated electron systems, metal-insulator transitions, magnetism, orbital ordering ("Kugel-Khomskii model"), and superconductivity. He is the author of approximately 300 scientific papers.