

## New books on physics and related sciences

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**Bogoliubov N N** *Collected Works* in 12 volumes (Science Classics Series, composed and edited by A D Sukhanov). *Quantum Theory* in 4 volumes. Vol. 10. **Bogoliubov N N, Shirkov D V** *Introduction to the Theory of Quantized Fields* (Eds D V Shirkov, A D Sukhanov) (Moscow: Nauka, 2008) 736 pp. ISBN 978-5-02-035721-1. RFBR Project 08-01-07035d.

This is the first attempt at publishing the complete collected body of research work of N N Bogoliubov, a classic of mathematics and natural science. It will comprise twelve volumes. Its uniqueness will stem from the fact that the papers included were never before published all together. Volume 10 is the fundamental monograph by N N Bogoliubov and D V Shirkov that went through four reprints in Russian and was translated into the main European languages. This book informed a large number of schools in which quantum field theory progressed in the second half of the 20th century. Its last Russian edition (1984) became a bibliographic rarity. Since the views on the nature of the renormalization group in Bogoliubov's formulation and on its potential use have greatly advanced, the editors found it advisable to insert a special Addendum, "Bogoliubov's renormalization group". This Addendum, written as an independent review article, places deliberate emphasis on the details of Bogoliubov's renormalization group as a special case of the continuous transformation group that can be traced back to the work of Marius Sophus Lie at the end of the 19th century, and on the affinity of renormalization group transformations to power-law similarity transformations (with self-similarity) that are quite familiar in hydro- and gas dynamics. The concluding section of the Addendum contains a synoptic review of three recently emerged (in the 1980s–1990s) trends derived from Bogoliubov's renormalization group: mass-dependent renormalization group at thresholds as required by the Standard Model, analytical perturbations theory free of nonphysical singularities in quantum chromodynamics, and the method of renormalization group symmetries for solving boundary problems of mathematical physics. The second — chronological — Addendum lists information (title pages) about all seven editions of *The Introduction to the Theory of Quantized Fields* (in three languages), the publications in many languages of the textbook for students by N N Bogoliubov's and D V Shirkov's *Quantum Fields* based on the monograph, and the table of contents of this textbook. This book has not been included in this collection as in fact its last edition appeared in the M V Lomonosov Moscow State University Classical University Textbook Series very recently (in 2005). The monograph is intended for undergraduate students, postgraduates, researchers, and teachers specializing in

mathematical physics, quantum field theory, the theory of elementary particles, and the history of physics. (Akademizdatssentr 'Nauka' RAN: 117997 Moscow, ul. Profsoyuznaya 90; tel. (7-495) 334-71-51; fax (7-495) 420-22-20; e-mail: secret@naukaran.ru; URL: <http://www.naukaran.ru/>)

**Ponomarev L I** *Under the Badge of Quantum* 3rd ed., revised and enlarged (Moscow: FIZMATLIT, 2007) 416 pp., ISBN 978-5-9221-0837-9.

The book is addressed to anyone who is interested in the sources, ideas and principal achievements of quantum physics, which informed the entire 20th century, as well as in its role in the maturation and roots of the current culture. The previous translations of this book were into 16 languages and were used in many countries as textbooks on the history of physics. The author — Professor and Corresponding Member of the Russian Academy of Sciences — for many years delivered lectures at the Chair of Theoretical Physics of the Moscow Institute of Physics and Technology. The book was recommended for publication by the Education-Methodical Association (EMA) of the Russian Federation University EMA Council as a textbook for students of higher educational establishments for the specialty Applied Mathematics and Physics. (Fiziko-Matematicheskaya Literatura MAIK 'Nauka/Interperiodika' Publ.: 117997 Moscow, ul. Profsoyuznaya 90; tel. (7-495) 334-74-21; fax (7-495) 334-76-20; e-mail: fizmat@maik.ru; URL: <http://www.fml.ru/>)

**Gorban' I I** *Processing of Acoustic Signals under Complicated Dynamic Conditions* (Kyiv: Naukova Dumka, 2008) ISBN 978-966-00-0752-9.

The monograph provides a description of the theory of spatial and temporal processing of hydroacoustic signals taking into account the complicated displacements of an antenna in space, the acoustic disturbance and specifics of the medium through which oscillations propagate, and of the theory of fast multichannel processing of hydroacoustic signals. The book is intended for specialists developing methods and algorithms of spatial and temporal processing of signals, for programmers who implement algorithms for the multichannel processing of signals, and for developers of hydroacoustic and radar systems (Vidavnitstvo 'Naukova Dumka' NAN Ukraini: 01601 Kyiv 1, vul. Tereshchenkivska 3; tel./fax 235-41-70; e-mail: fizmat@ndumka.kiev.ua; URL: <http://www.ndumka.kiev.ua/>)

**Feinberg Evgenii L'vovich: Personality Through the Memory Prism** (General Ed. V L Ginzburg) (Moscow: Izd. Fiziko-matematicheskoi Literatury (Fizmatlit), 2008) 400 pp. ISBN 978-5-94052-165-5.

This collection of articles is devoted to the memory of an illustrious scientist and human being — Academician Evgenii

L'vovich Feinberg, widely known not only as a brilliant physics theoretician but also as a profound thinker and erudite. Here is a collection of reminiscences by people who were in close contact with him for many years, in science and life alike, and who knew him well and loved him. The book is intended for a wide range of readers interested in the history of science and culture of the 20th century. (Fiziko-Matematicheskaya Literatura (Fizmatlit) Publ.: 123182 Moscow, ul. Shchukinskaya 12, korp. 1; tel. (7-499) 720-41-53; e-mail: fizmatlit@narod.ru)

***Yakov Borisovich Zel'dovich: Memoirs, Letters, Documents*** (Ed. S S Gershtein) 2nd ed., enlarged (Moscow: FIZMATLIT, 2008) 416 pp. ISBN 978-5-9221-1009-9.

Ya B Zel'dovich — an outstanding scientist of the 20th century — made an immense contribution to many fields of science and technology. His span of interests was uniquely broad — from the physics of combustion and explosion, through nuclear weapons, to the deepest secrets of astrophysics and cosmology. Such was the size of the body of results published by Zel'dovich that before the famous British physicist Stephen Hawking met him, he had been convinced that the name Zel'dovich was the pseudonym of a group of scientists (like Bourbaki). Landau used to say that he knew of no other physicist — with the exception of Fermi — who would generate such a wealth of ideas as Zel'dovich. The book contains memoirs of his friends, colleagues, and disciples, many of them well-known scientists, along with some archival documents and letters. The book is intended for a broad range of readers keen on the history of sciences in general and the history of the Soviet Atomic Project in particular. (Fiziko-Matematicheskaya Literatura MAIK 'Nauka/Interperiodika' Publ.: 117997 Moscow, ul. Profsoyuznaya 90; tel. (7-495) 334-74-21; fax: (7-495) 334-76-20; e-mail: fizmat@maik.ru; URL: <http://www.fml.ru/>)

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