

Professor Dr.Sc. Mult., d.h.c. Alexander K. Belyaev

Curriculum vitae

General information

Born on August 13, 1953 in Kamchatka, Russia
Marital status married, 3 children
Spouse Olga Belyaeva (M.A.)

Education and Degrees

1.9.1960 -29.6.1970 School, finished with distinction.
1.9.1970-28.2.1976 Student at the Polytechnic Institute in Leningrad.
28.2.1976 Graduated from the Polytechnic Institute in Leningrad with distinction (cum lauda), Diploma with distinction in Dynamics and Strength of Machines.
1.4.1976-1.4.1979 PhD. Student of the Department of Mechanics and Control Processes, Polytechnic Institute in Leningrad.
24.4.1979 Doctor (PhD.) in the field of Physics and Mathematics.
15.3.1988 Habilitation as a Docent of the Department of Mechanics and Control Processes at the Polytechnical University of St. Petersburg (former Leningrad Polytechnic Institute).
27.6.1997 Habilitation (venia docendi) at the Institute of Rational Mechanics at the Technical University of Vienna, Austria.
19.06.2001 Habilitation at the Polytechnical University of Institute of St. Petersburg (Doctor of Science in Physics and Mathematics)

Honours

13.03 2012 Honorary Doctorate (doctor honoris causa) of Johannes Kepler University, Linz, Austria
15.04.2016 Foreign Member of the Austrian Academy of Sciences.

Awards

Thomas A. Jaeger Prize (main prize) of the International Association for Structural Mechanics in Reactor Technology, 1993.
Michail A. Lavrentiev Award in Mathematics and Mechanics of the Russian Academy of Sciences, 2016.

Professional Career

- 7.5.1979-22.4.1986 Assistant, Department of Mechanics and Control Processes, Leningrad Polytechnic Institute.
- 22.4.1986-19.06.2001 Associate Professor, Department of Mechanics and Control Processes, State Technical University of St. Petersburg (former Leningrad Polytechnic Institute).
- since 19.06.2001 Full Professor, Department of Mechanics and Control Processes, State Polytechnical University of St. Petersburg
- since 01.12.2004 Head of the Mechatronics Laboratory, Institute for Problems in Mechanical Engineering, Russian Academy of Sciences, St. Petersburg
- 01.12.2004- 09.06.2015 Vice-Director for Research, Institute for Problems in Mechanical Engineering, Russian Academy of Sciences, St. Petersburg
- since 10.10.2012 Director of the Institute of Applied Mathematics and Mechanics at the State Polytechnic University of St. Petersburg
- since 09.06.2015 Director, Institute for Problems in Mechanical Engineering, Russian Academy of Sciences, St. Petersburg

Research and tutorial stay abroad

- 2.10.1988-29.8.1989 Sabbatical leave, Institute of Rational Mechanics, Technical University of Vienna, Austria.
- 10.3.1991-1.7.1991 Visiting Professor, Institute of Mechanics, University of Innsbruck, Austria.
- 7.1.1992-30.9.1993 Research Fellow of the Alexander von Humboldt Foundation, Institute of Technical Mechanics, Technical University of Braunschweig, Germany
- 4.1.2006-28.2.2006 Research Fellow of the Alexander von Humboldt Foundation, Institute of System Theory and Control, University of Saarland, Saarbruecken, Germany
- 1.10.1993-31.1.1999 & 1.10.2002-30.09.2003 etc. (altogether 8 years) - Visiting Professor in the rank of a Full Professor, Institute of Technical Mechanics, Department of Mechatronics, Johannes Kepler University of Linz, Austria
- 1.10.1998-31.12.1998, 1.11.2000-31.12.2000, 15.10.01-15.11.01 - Visiting Professor in the rank of a Full Professor, Institute of Rational Mechanics, Technical University of Vienna, Austria.

Scientific Interests

high-frequency dynamics, waves in solids, stochastic waves, mechatronics, piezoelectricity, vibration of uncertain structures, random vibration, mechanics of systems with fractional derivatives, stability of chains, belts and drillstrings, hydrogen embrittlement, biomorphic control, vibration mitigation.

Memberships

Member of the Council of the European Mechanics Society (EUROMECH)
Member of Presidium of Russian National Committee for Theoretical and Applied Mechanics
Gesellschaft für Angewandte Mathematik und Mechanik (GAMM),
Society of Interaction of Mathematics and Mechanics (ISIMM).

Editorial Activity

Editor in Charge of the Series on Stability, Vibration and Control of Systems, World Scientific Publishers, 2000-2006,
Associate Editor of the International Journal of Vibration and Control, since 2014.
Member of the Editorial Board of the Zeitschrift fuer Angewandte Mathematik und Mechanik (ZAMM), since 2004
Member of the Advisory Board of the International Journal Acta Mechanica, since 2002, Russian Coordinator of the Advisory Board.
Member of the Editorial Board of the International Journal of Structural Control and Health Monitoring, since 2012.
Member of the Editorial Board of the International Journal "Mechanics of Advanced Materials and Modern Processes" since 2013
Deputy Editor of the Russian Journal "Nanosystems; Physics, Chemistry, Mathematics", Coordinator of the area Mechanics, since 2011.

International Conferences' Chair

Chairman of IUTAM (International Union for Theoretical and Applied Mechanics) Symposium on Vibration Analysis of Structures with Uncertainties, July 5-9 2009, St. Petersburg, Russia
Chairman of Fourth European Conference on Structural Control, September 8-12 2008, St. Petersburg, Russia
Co-Chairman of Fourth European Conference on Structural Control, June 16-20 2012, Genoa, Italy.
Chairman of the Joint Russian-Austrian Workshop on Advanced Dynamics and Model-Based Control of Structures and Machines, April 2010, Linz, Austria
Chairman of Fifth European Conference on Structural Control, Genoa, June 17-20 2012
Chairman of the International Workshop on Advanced Dynamics and Model-Based Control of Structures and Machines, July 2-4 2012, St. Petersburg, Russia.
Chairman of the International Workshop on Mechanics and Model-Based Control of Structures and Machines, September 20-25 2015, Vienna, Austria.
Chairman of INTAS-Symposium "Advanced Dynamical Modeling in Structural Control", Vienna, July 5-7 2004.

Chair of Minisymposia at International Conferences

Minisymposium on Structronics, International Conference on Advanced Problems in Mechanics. St. Petersburg, May 15, 2001.

Minisymposium on Dynamics and Control of Structures, International Conference on Advanced Problems in Mechanics. St. Petersburg, June 24, 2002.

Minisymposium on Mechatronics, International Conference on Advanced Problems in Mechanics. St. Petersburg, June 25-30, 2004.

Minisymposium on Mechatronics, International Conference on Advanced Problems in Mechanics. St. Petersburg, June 25-30, 2005.

Minisymposium on Mechatronics and Biomechanics, International Conference on Advanced Problems in Mechanics. St. Petersburg, June 22, 2006.

Minisymposium on Mechatronics, International Conference on Advanced Problems in Mechanics. St. Petersburg, June 25-30, 2007.

Minisymposium on Fatigue in Mechanical Engineering, International Conference on Advanced Problems in Mechanics. St. Petersburg, July 8, 2008.

Minisymposium on Fractional Derivatives in Mechanics. 6th EUROMECH Nonlinear Dynamics Conference, St. Petersburg, June 25-30, 2008.

Plenary Lectures

1. High- frequency dynamics- the missing link in the evolution of dynamics. 10th International Congress on Sound and Vibration. Stockholm, July 2003.

2. Method of Lyapunov functions in Mechanics and Control, Third European Conference on Structural Control, Vienna, May 2004.

3. Benchmark study of three approaches to stochastic waves in elastic solids. IUTAM Symposium on Vibration Analysis of Structures with Uncertainties, St Petersburg, July 2009.

4. High-frequency dynamics of engineering structures. Jahrestagung der Gesellschaft für Angewandte Mathematik und Mechanik, Graz, April 2011.

5. Einfluss der deutschen Sprache auf russische Technikparadigmen, Rettenbacher Symposium, Steyr, October 2011.

Publications

over 200 scientific publications in Russian, English and in German, among them A.K.Belyaev, A.Guran, Selectic topics in structronics and mechatronic systems. World Scientific Publishers, 2003, 441 p.

A.K.Belyaev, R.S..Langley, Vibration Analysis of Structures with Uncertainties. Springer-Verlag, 2011, 496 p.

H.Irschik, A.K.Belyaev, M. Krommer, Advanced Dynamics and Model Based Control of Structures and Machines. Springer WienNewYork, 2012, 247 p.

A.K.Belyaev, H.Irschik and M. Krommer. Mechanics and Model-Based Control of Advanced Engineering Systems. Springer WienNewYork, 2013, 278 p.

H.Irschik and A.K.Belyaev. Dynamics of Mechanical Systems with Variable Mass. Springer, 2014, 266 p.

Translations

Translation of 7 classical monographs of the leading Russian scientists into English for Springer-Verlag:

"Vibrations of elasto-plastic bodies" by V.A.Palmov, Springer-Verlag, Berlin-Heidelberg, 1998, 311p.

"Nonlinear dynamics of active and passive systems of vibration protection" by M.Z.Kolovsky, Springer-Verlag, Berlin-Heidelberg, 1999, 426 p.

"Analytical mechanics" by A.I. Lurie, Springer-Verlag, Berlin-Heidelberg, 2002, 864 p.

"Dynamics of synchronising systems" by R.F. Nagaev, Springer-Verlag, Berlin-Heidelberg, 2002, 326p.

"Dynamics of mechanical systems with Coulomb friction" by Le xuan Anh, Springer-Verlag, Berlin-Heidelberg, 2003, 284p.

"Theory of elasticity" by A.I. Lurie, Springer-Verlag, Berlin-Heidelberg, 2005, 1050 p.

"Nonlinear electromechanics" by D.Yu.Skubov and K.Sh.Khodzaev, Springer-Verlag, Berlin-Heidelberg, 2008, 410 p.

Presentations

over 70 presentations at International Conferences and over 50 invited lectures at the Universities and Industrial Corporations in Europe and in the USA.

Joint Research with international research centers

Sandia National Laboratories, Livermore, USA

Coordinator of the partnership between Russian scientific organizations and Austrian Center of Competence in Mechatronics (ACCM), Linz, Austria

Key-Researcher at the ACCM, Linz, Austria

National Taiwan University, Taipei, Taiwan.