

ALEXEI DZHERMENOVICH GVISHIANI



Born on 29 October 1948 in Moscow

Nationality: Russian

Citizenship: Russian citizen

Education: Moscow State University, Faculty of Mathematics and Mechanics, 1971, Specialized in Mathematics.

Language skills: Russian, English, French.

Titles:

Member of the Russian Academy of Sciences (May, 2006); Foreign Member of the Ukrainian Academy of Sciences (May, 2003); Professor, Chair of the theory of functions and functional analysis (April 1992, M.V. Lomonosov Moscow State University).

Degrees:

Honorary Doctor of the National Technological University of Ukraine (2006); Doctor of Science in Physics and Mathematics (April 1984, Schmidt Institute of Physics of the Earth, AS USSR); PhD in mathematics specialized in the theory of functions and functional analysis (Moscow State University, Faculty of Mathematics and Mechanics, June 1974).

Awards:

Medal "50th Anniversary of Mongolian People's Revolution" (1971)

Medal "850th Anniversary of Moscow" (1997)

Order of Friendship (2009)

Major scientific results:

Theory of representations of groups

The proof of Gelfand-Graev-Gvishiani formula for the characters of representations of discrete series of group G of matrixes of the second order with elements from local non-Archimedean field and description of representations of derived group G^x (1973-1974).

Integral geometry and the theory of group representations

Description of the new features of Radon transformation on non-Archimedean field and the studies of representations of group $G=SL(2)$ in functions space on Lobachevsky plane (1974-1978).

Mathematical geophysics and geoinformatics

Introduction of classes of dynamic tasks of recognition and the construction of mathematic theory assessing limit solutions stability in dynamic tasks of recognition (1979-1983);

Construction of a new family of algorithms "Voting on the Feature Set (VFS)" to solve dynamic problems of recognition (1979-1984);

Construction of discrete mathematical model to recognize possible locations of strong earthquakes and their time stability as a basis for seismic zoning (1981-1985);

Recognition of strong earthquake occurrence locations in different seismic regions of the Earth in the frame of the recognition dynamic tasks model (1978-1990);

Participation in the creation of the first high-speed computer Internet nodes in the Russian Academy of Sciences (1991-1993);

Creation of new methods of hierarchic clustering of spatial geophysical and geodynamic objects on the basis on fuzzy logic and their application to geophysics and geodynamics (1999-2006);

Development of algorithms of anomaly recognition on time series on the basis of the fuzzy theory of sets and the application of them to volcano monitoring and to the analysis of gravitational and geomagnetic data (2001-2006).

Scientific research and management:

Member of the Council for Technological Breakthrough under the Presidium of Russian Academy of Sciences for coordinating scientific research in the field of “space technologies”; 2009

Member of the specialized Academic Council for theses defense of the Schmidt Institute of Physics of the Earth, 2009

Member of the Organizing Committee of the Russian Academy of Sciences to preparation for the implementation of activities to be held in Russia in 2008 the International Year of Planet Earth, 2008

Deputy Academician-Secretary of the Earth Science Branch of RAS; 2008

Chairman of the Russian National Committee on eGY; 2007-2008

President of the National Geophysical Committee, RAS; 2006

Council Member of the research program “Geophysics of interactions between the geospheres” of the Branch of Earth Science of RAS; 2006-2008

Scientific Council Member of the fundamental research program of Presidium of the Russian Academy of Sciences “The elaboration of principles of the scientific distributed information-computer medium on the basis of GRID technologies”; 2006-2008

Director and Chairman of the Scientific Council of the Geophysical Center RAS (GC RAS); January, 2005

Head of Geoinformatics Laboratory, GC RAS; July 2005

Chairman of the National CODATA Committee (Committee on Data for Science and Technology, ICSU); 2005.

Deputy Director of Schmidt Institute of Physics of the Earth, RAS (IPE RAS); 2004.

Member of RAS Scientific Council on Geoinformatics; 2003.

Deputy General Director of Schmidt United Institute of Physics of the Earth, RAS (UIPE RAS); 1999-2004.

Head of UIPE/IPE Division of Mathematical Geophysics and Geoinformatics; 1997

Head of the Centre of Geophysical Data Studies and Telematics Applications (CGDS), UIPE, IPE RAS; 1991-2005.

Chairman of Russian Permanent UNESCO Committee on Network Strategies (PCNETS); 1990-1996.

Researcher, group leader, department head, laboratory head of IPE; 1975-1991.

France:

Guest researcher at European Mediterranean Seismological Centre, Strasbourg; 1990-1993.

Guest researcher at the Institute of Physics of the Earth, Strasbourg; 1997-2001.

Guest researcher at Clermont-Ferrand University volcanology laboratory; 2003-2005.

USA:

Guest researcher at the National Geophysical Data Center, NOAA, Boulder, Colorado; 1980, 1983, 1985, 2000, 2002

Spain:

Guest researcher at Madrid National Institute of Geography; 1886.

Lecturing and tuition:

Personal tuition in preparing a Doctor’s thesis and ten Master’s theses.

Professor, Chair of the theory of functions and functional analysis, Department of Mechanics and Mathematics, Lomonosov Moscow State University; 1989-2000.

Assistant lecturer, associated professor, Chair of the theory of functions and functional analysis, Faculty of Mechanics and Mathematics, Moscow State University; 1974-1988,
Assistant lecturer, Chair of mathematical analysis, Faculty of Mechanics and Mathematics, Moscow State University; 1971-1974.

France:

Full visiting professor of the summer term in the Institute of Physics of the Earth, Paris (Institute de Physique du Globe de Paris); 1992-2005.

Full visiting professor of the summer term in the Institute of Physics of the Earth, Strasbourg (Institute de Physique du Globe de Strasbourg); 1991.

International activity:

Geophysics:

Vice President of European Mediterranean seismological center (EMSC/CSEM); 1996.

Vice President of international association “World Network for Education and Scientific Exchange”; 1993.

Principal researcher (Russian) of the joint project of RAS and Scientific Research Center of France (CNRS) “Identification of areas of earthquake likely occurrence in regions of moderate seismicity”; 1980-1986, 1998-2001.

Principal researcher (Russian) of the joint project of RAS and CNRS (France) “Monitoring of basalt volcanoes with the use of artificial intelligence methods”; 2000-2006.

International Council for Science (ICSU):

ICSU Strategic Committee on Information and Data member (SCID); 2007-2008

Chairman of CODATA Task Group “eGY Earth and Space Science Data Interoperability”; 2007

Vice President of CODATA; 2002

Chairman of CODATA Task Group “Comparative mathematical methodologies for data handling and knowledge interpretation”; 1998-2000.

Chairman of CODATA Task Group “Data Management and virtual laboratories”, 2000-2002.

Vice-Chair of the WDC Panel of the International Council for Science (ICSU); 1996-2006.

Chairman of the coordinating Committee “Data Centers and Data Exchange” and Bureau member of the international program “Lithosphere”; 1985-1995.

Information Society Technologies (IST) Program of the European Union:

2009. Invited speaker at the International Conference "New Worlds - New Solutions - Research as a Basis for Developing Europe in a Global Context", devoted to opening of Swedish presidency in the European Union, 7-8 July 2009, Lund, Sweden.

Expert-evaluator of the IST program projects and projects results; 1999 – 2002

Scientific leader of four IST implementation projects of EU program in Russia, Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Ukraine, Uzbekistan; 1996-2005

United Nations agencies:

Leader and participant of UNESCO environmental, informatics and e-collaboration projects in Russia and in CIS countries; 1991- 1999

Leader of the UNESCO project on CD-ROM technology for speeding scientific research in Morocco, Kenya and Zambia; 1992 – 1994

Speaker for UNIDO training e-collaboration courses in Hungary and Czech Republic, 1995

Other:

Member of editorial board of international science and technology journal “System Research and Information Technologies”, Kiev, Ukraine.

Publications:

Author of five books published in Russian, English, French, Hungarian, and Italian languages. One hundred and twenty three papers were published and reviewed in international and

Russian scientific journals. A number of papers submitted for publication and published were co-authored by academicians I.M. Gelfand, M.A. Sadovsky, V.N. Strakhov, V.I. Keilis-Borok, I.F. Obraztsov, and V.I. Osipov. The most recent books J. Dubois, A. Gvishiani “Dynamic Systems and Dynamic Classification Problems in Geophysical Applications” (1998) and A. Gvishiani, J. Dubois “Artificial Intelligence and Dynamic Systems for Geophysical Applications” (2002) were published by Springer publishing house in CODATA series “Data and Knowledge in Changing World”