

# Curriculum Vitae

## Alexander F. Zakharov

Russian State Scientific Centre –  
Institute of Theoretical and  
Experimental Physics,  
B. Cheremushkinskaya, 25,  
Moscow, 117218, Russia  
E-mail: zakharov@itep.ru  
&  
Bogoliubov Laboratory of  
Theoretical Physics,  
Joint Institute for Nuclear Research,  
Dubna, Russia

### Personal data

Citizenship: Russian  
Nationality: Russian  
Sex: male,  
Marital status: married,  
One daughter

### Education

- |           |   |                |
|-----------|---|----------------|
| 1971-1977 | Chair of Differential Equations,<br>Faculty of Applied Mathematics,<br>Moscow State Technical University,<br>(Moscow Aviation Institute),<br>M. S. with honors in Applied Mathematics | Moscow, Russia |
| 1984-1987 | Faculty of Mechanics and Mathematics,<br>Lomonosov Moscow State University,<br>M. S. with honors in Mathematics   |                |

## Degrees

- 1997 Doctor in Physical and Mathematical Sciences  
or Doctor of Sciences in Astrophysics  
(the highest Russian scientific degree)  
(the Russian equivalent of German Habilitation Degree)  
Lomonosov Moscow State University,  
Thesis's title: "Gravitational lenses and microlensing" Moscow, Russia
- 1990 PhD in Astrophysics  
or Candidate of Physics and Mathematics  
Lomonosov Moscow State University,  
Thesis's title: "The motion of the particles  
and photons in the gravitational field of  
the Kerr black hole" Moscow, Russia

## Employment

- 1977-present Russian State Scientific Centre – Moscow, Russia  
Institute of Theoretical and  
Experimental Physics,  
Junior Researcher, Researcher,  
Senior Researcher,  
since 1998 Leading Researcher (Research Professor)

## Memberships

- Vice-chair of Scientific Commission H Fundamental Physics in Space (COSPAR).
- Coordinator of researches on gravitational lensing and gravitational waves of the Relativistic Astrophysics Section of the Astronomy Council of Russian Academy of Sciences.
- A member of Editorial Board of the Serbian Astronomical Journal
- A member of Editorial Advisory Board of the Bulgarian Astronomical Journal
- A member of Scientific Organizing Committee for a couple of International Conferences

## Research Interests

Black Holes

Gravitational Lensing

Dark matter

Gravitational Radiation

General Relativity

Alternative Theories of Gravity

Cosmology

Relativistic Astrophysics

# Visiting Positions

|                               |   |
|-------------------------------|---|
| October 2017 – April 2018     | National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China  |
| May 2017                      | North Carolina Central University, USA  |
| November 2016                 | North Carolina Central University, USA  |
| April 2016                    | Comenius University in Bratislava, Slovakia   |
| November 2015                 | North Carolina Central University, USA  |
| March 2015 – May 2015         | National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China  |
| October 2014                  | Belgrade Astronomical Observatory, Serbia   |
| April 2014 – August 2014      | North Carolina Central University, USA  |
| December 2012 – April 2013    | North Carolina Central University, USA  |
| October – November 2012       | Salento University, Lecce, Italy  |
| September 2012                | Belgrade Astronomical Observatory, Serbia   |
| August 2012                   | National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China  |
| November – December 2011      | Salento University, Lecce, Italy  |
| June 2011                     | Belgrade Astronomical Observatory, Serbia   |
| March – April 2011            | Salento University, Lecce, Italy  |
| April – July 2010             | National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China  |
| December 2009                 | University of Padova, Padova, Italy   |
| October 2009 – December 2009  | University of Salento and Section of INFN of Lecce, Lecce, Italy                    |
| November 2008 – December 2008 | University of Napoli and Section of INFN of Napoli, Napoli, Italy                   |
| July 2008 – November 2008     | University of Salento and Section of INFN of Lecce, Lecce, Italy                    |
| October 2007                  | National Astronomical Observatories of Chinese Academy of Sciences, Shanghai, China |
| August 2007                   | National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China  |
| June – July 2007              | University of Lecce and Section of INFN of Lecce, Lecce, Italy                      |
| April – May 2006              | University of Lecce and Section of INFN of Lecce, Lecce, Italy                      |
| September - December 2005     | National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China  |
| March - April 2005            | University of Lecce and Section of INFN of Lecce, Lecce, Italy                      |
| December 2004                 | Belgrade Astronomical Observatory, Serbia   |
| March - April 2004            | University of Lecce and Section of INFN of Lecce, Lecce, Italy                      |

## Visiting Positions (continued)

|                        |  |
|------------------------|--|
| April - July 2003      | National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China |
| February - March 2003  | University of Lecce and Section of INFN of Lecce, Lecce, Italy                     |
| August 2002            | Nanjing University, Nanjing, China   |
| December 2001          | University of Lecce and Section of INFN of Lecce, Lecce, Italy                     |
| September 2000         | Korean Institute for Advanced Study, Seoul, Korea                                  |
| April 1994             | Oxford University, Oxford, UK  |
| August - November 1993 | Max Planck Institute for Astrophysics, Garching, Germany                           |

## Conferences

Talks were delivered at the following (selected) conferences:

The International Conference on Particle Physics and Astrophysics (ICPPA-2017) (Moscow, 2 – 5 October 2017),

The International Conference "Bursting Universe by Robot Eyes" (an invited plenary talk, 14 - 18 August 2017, Moscow, Sternberg Astronomical Institute, Moscow State University),

The XXXI International workshop on high energy physics "Critical points in the modern particle physics" (an invited plenary talk, Protvino, Institute for High Energy Physics, July 2017),

The Ginzburg Centennial Conference on Physics, Lebedev Physics Institute, Moscow, Russia, June 2017),

The round table 100 years of Black Holes between the Royal Society and the Russian Academy of Sciences (an invited plenary talk, Chichiley Hall, UK, April 2017),

52nd Rencontres de Moriond - Gravitation session (La Thuile, Italy, March 2017),

International Scientific Session of Russian Academy of Sciences on Non-ideal plasma physics (Moscow, Presidium of Russian Academy of Sciences, December 2016),

The 2nd International Conference on Particle Physics and Astrophysics (ICPPA'16) (Moscow, October 2016),

International Conference "New Trends in Mathematical and Theoretical Physics" (Moscow, October 2016)

an invited plenary talk at The XXIII International Baldin Seminar Relativistic Nuclear Physics and Quantum Chromodynamics (JINR, Dubna, Russia, September 2016),

an invited plenary talk at the 19th International Seminar on High Energy Physics (Quarks-2016) (Pushkin, Russia, May - June, 2016),

a talk at the Session-Conference of Nuclear Physics Section of Physics Department of RAS, (April 2016, JINR, Dubna, Russia),

an invited plenary talk at the Seminar Advances of Russian Astrophysics – 2015: theory and experiment, December 2015, Sternberg Astronomical Institute, Moscow, Russia,

a talk at the 4th South Africa – JINR Symposium Few to Many Body-Systems: Models, Methods and Applications (September 2015, JINR, Dubna, Russia),

an invited plenary talk at the Russian-Italian School on Astrophysics and Cosmology at Dubna, (September 2015, Dubna University, Dubna, Russia),

a talk at the International Workshop on Supersymmetries & Quantum Symmetries - SQS'2015 (August 2015, JINR, Dubna, Russia),

a plenary talk at the XVI Workshop on High Energy Spin Physics (DSPIN-15) (September 2015, JINR, Dubna, Russia),

a talk at the 17th Lomonosov Conference on Elementary Particle Physics (August 2015, Moscow),

talks at the XIV Marcel Grossmann Meeting on General Relativity (July 2015, Rome, Italy),

an invited plenary talk at the XIIth International Conference on Gravitation, Astrophysics and Cosmology (June – July 2015, Peoples Friendship University of Russia (PFUR), Moscow, Russia),

an invited plenary talk at the Xth Serbian Conference on Spectral Line Shapes in Astrophysics (June 2015, Srebrno jezero, Serbia),

an invited talk at the Scientific-Coordination Session on Non-Ideal Plasma Physics (December 2014), Moscow, Russia),

a talk at the Workshop on Precision Physics and Fundamental Physical Constants-2014, (December 2014, Dubna, Russia),

a talk at the International Session-Conference of Nuclear Physics Section of Physical Science Division of RAS (Moscow, Russia, November 2014),

a talk at the XVI International Conference on Symmetry Methods in Physics (SYMPHYS-XVI), (Dubna, October 2014),  
 an invited plenary talk at the III International Workshop on Active Galactic Nuclei and Gravitational Lensing, (October 2014 - Koncarevo, Serbia),  
 an invited talk at the XXII International Baldin Seminar on High Energy Physics Problems, (Dubna, September 2014),  
 a talk at The International Workshop on Supersymmetry in Integrable Systems-SIS-14, (Dubna, September 2014),  
 an invited talk at the Zeldovich-100 Conference, Sternberg Astronomical Institute, Moscow, Russia, March, 2014,  
 an invited talk at EU-Italy-Russia Dubna Round Table, (JINR, Dubna, Russia, March, 2014),  
 The XV International Workshop on High Energy Spin Physics (DSPIN-13)(an invited plenary talk, JINR, Dubna, Russia, October 2013),  
 The Workshop on Black and Dark Topics in Modern Cosmology and Astrophysics, the Dubna University, (an invited plenary talk, Dubna, Russia, September 2013),  
 The 16th Lomonosov Conference on Elementary Particle Physics (August 2013, Moscow),  
 The 20th International Conference on General Relativity and Gravitation (GR20) and the 10th Amaldi Conference on Gravitational Waves (Amaldi10) GR 20 (Warsaw, Poland, July 2013),  
 The XXIXth International Workshop High Energy Physics, (IHEP, Protvino, Russia, June 2013),  
 The 9th Serbian Conference on Spectral Line Shapes in Astrophysics & the COST Action MP1104 "Polarization as a tool to study the Solar System and beyond" (Banja Koviljaca, Serbia, May 2013)),  
 The XII Congress of Serbian Physicists, (invited plenary talk, April 2013, Vrnjacka Banja, Serbia),  
 The 6th Balkan Workshop BW2013 and 10 Years of the Southeastern European Network in Mathematical and Theoretical Physics (SEENET-MTP), (April 2013, Vrnjacka Banja, Serbia),  
 an invited plenary talk the 7th Mathematical Physics Meeting: Summer School and Conference in Modern Mathematical Physics (Institute of Physics, Belgrade, Serbia, September 2012),  
 The Belissima Conference "Future science with metre-class telescopes" (Belgrade, Serbia, September 2012),  
 The Workshop on "Black Hole Growth in the Universe. Astrophysical Modelling of super- and massive black holes and their environment" (Beijing, September 2012, National Astronomical Observatories of Chinese Academy of Sciences),  
 The 39th COSPAR Scientific Assembly (three talks) (July 2012, Mysore, India),  
 an invited plenary talk the Fifth International ASTROD Symposium on Laser Astrodynamics, Space Test of Relativity and Gravitational-Wave Astronomy (July 2012, Raman Research Institute, Bangalore, India),  
 The International Conference "Black Hole Universe 2012" (Bamberg, Germany, June 2012),  
 The All-Russian Conference on Actual Problems of Intergalactic Astronomy (Pushchino, Russia, April 2012),  
 The Third Italian-Russian Round Table on Astrobiology @ JINR (December 2011, Dubna, Russia),  
 The Fourth Italian-Russian Round Table on Black Holes @ JINR (December 2011, Dubna, Russia),  
 The Session on Physics of Fundamental Interactions (Physics Division, Russian Academy of Sciences, Moscow November, 2011),  
 The Session on non-ideal plasma, (Russian Academy of Sciences, Moscow November, 2011),  
 The Seminar for young scientists "Physics of high energy density in matter", (an invited lec-

ture, November 2011, FAIR-Russia Research Centre, Moscow),  
 Low dimensional physics and gauge principles, (The Nor Amberd International Conference Center, Armenia, September 2011),  
 The XVth Lomonosov Conference on Elementary Particle Physics, (Moscow State University, Moscow, August, 2011)  
 The Special workshop Black Holes and Spectral Lines in the frame of COST action MP0905 Black Holes in an Violent Universe (an invited talk, Divcibare, Serbia, June, 2011),  
 The Session on Astrophysics and Astronomy (Russian Academy of Sciences, Moscow, January 2011),  
 The XIV International Conference on Symmetry Methods in Physics (SYMPHYS-XIV) (Tsakhkadzor, Armenia, August, 2010),  
 The 1st Workshop on "Spectroscopy as a tool to investigate Active Galactic Nuclei and gravitational lenses" (Country Club hotel "BABE" July 2010, Serbia),  
 The 22nd Rencontres de Blois, entitled Particle Physics and Cosmology (Blois, July 2010, France),  
 the 38th COSPAR Assembly 2010 (Bremen, July 2010, Germany),  
 The KIAA-DoA-NAOC Joint Workshop on Dynamics of Astrophysical Disks at the Kavli Institute for Astronomy and Astrophysics, (Peking University, Beijing, China, May 2010),  
 The 45th Conference Rencontres de Moriond–Cosmology (La Thuile, Val d'Aosta, March 2010, Italy),  
 The Workshop on Lunar Laser Ranging Data (an invited talk, ISSI, February 2010, Bern, Switzerland),  
 The VIII Winter School on Theoretical Physics – FROM NUCLEAR PHYSICS TO ASTROPHYSICS AND COSMOLOGY, (Invited Lectures, JINR, Dubna, January 2010),  
 The first Italian–Russian round table Dubna, JINR, (December 2009),  
 The International Workshop Many faces of GRB phenomena optics vs high energy (Invited talks, Special Astrophysical Observatory, Novij Arzhyz, October 2009, Russia),  
 The first workshop on astrophysical winds and disks: Similar phenomena in stars and quasars (an invited talk, Platamonas, Greece, September, 2009),  
 The International Bogolyubov Conference Problems of Theoretical and Mathematical Physics devoted to the 100th anniversary of N.N.Bogolyubov's birth, (August, 2009, BLTP, JINR, Moscow – Dubna, Russia),  
 The 14th Lomonosov Conference on Elementary Particle Physics (August 2009, Moscow),  
 The International workshop on Supersymmetries and Quantum Symmetries" (SQS'09, BLTP JINR, Dubna, Russia, July - August, 2009),  
 The International Conference XX Rencontres de Blois, (Blois, France, June 2009),  
 7th Serbian Conference on Spectral Line Shapes in Astrophysics (Zrenjanin, Serbia, June, 2009)),  
 The Fourth Sakharov Conference on Physics (May 2009, Lebedev Physics Institute, Moscow, Russia),  
 The International Workshop on Frontiers of Black Hole Physics (May 2009, JINR, Dubna, Russia),  
 Session and Conference of Nuclear Physics section of General Physics Division of Russian Academy of Science (a plenary talk, IHEP, Protvino, Russia, December 2008)  
 The International Workshop "Nature of Gravity: Confronting Theory and Experiment in Space (an invited talk, October 2008, Bern, Switzerland),  
 The International Workshop "TeV Particle Astrophysics-2008", (September 2008, IHEP, Beijing, China),  
 The Symposium and School on Physics of Ionized Gases (Novi Sad, Serbia, August 2008),



The International Workshop on N-body simulations (Turku, Finland, August 2008),  
 The International Conference XX Rencontres de Blois, (Blois, France, June 2008),  
 XLII Rencontres de Moriond, (La Thuille, Italy, March 2008),  
 The Conference on Selected Problems of Modern Physics, Dedicated to the 100th anniversary of the birth of D.I. Blokhintsev, BLTP Joint Institute for Nuclear Research, (an invited talk, Dubna, June 2008),  
 The Symposium IAU 248, Shanghai Astronomical Observatory, October, 2007,  
 The Dark Matter in Astrophysics and Particle Physics, The 6th International Heidelberg Conference (an invited talk, Sydney, Australia, September 2007),  
 The International workshop on Supersymmetries and Quantum Symmetries" (SQS'07, BLTP JINR, Dubna, Russia, July - August, 2007),  
 The International Workshop on Dark Matter & Dark Energy, National Astrophysical Observatories of China, Beijing, August, 2007  
 The Relativistic Astrophysics: 4th Italian-Sino Workshop (Pescara, Italy, July 2007),  
 The Fourth International Workshop on Gravity, Astrophysics and Strings at the Black Sea (GAS@BS) , (an invited talk, June 2007, Primorsko, Bulgaria),  
 The conference XLIIst Rencontres de Moriond, (La Thuille, Italy, March 2007),  
 the 14h International Seminar on High Energy Physics QUARKS'2006, (Repino, St.Petersburg, Russia, May 2006),  
 the 12th Regional Conference on Mathematical Physics, Islamabad, Pakistan, 27 March - 1 April, 2006, (an invited talk)),  
 The All-Russian Astrophysical Conference on High Energy Astrophysics (Moscow, December 2005),  
 the International Workshop "FUNDAMENTAL PHYSICS IN SPACE WITH SMALL PAYLOADS (FPS-06)" (Frascati, INFN-LNF, Italy, 21-23 March 2006, (An invited talk) ),  
 The Twelfth Lomonosov International Conference on Elementary Particle Physics (Moscow, August 2005),  
 The Workshop on Gravitational Lensing in the Kerr Spacetime Geometry ARCC, AIM Research Conference Center (Palo Alto, USA, July 2005, (An invited talk)),  
 The Joint European and National Astronomical Meeting Distant Worlds (Liege, Belgium, July, 2005),  
 The Workshop on Physics of Neutron Stars-2005, (SpB PTI, St. Petersburg, Russia, June, 2005),  
 The 5th International Conference on New Non-Accelerator Physics (June 2005, Dubna, Russia),  
 The 5th Serbian Conference on Spectral Line Shapes in Astrophysics (Vrsac, Serbia, June, 2005, (An invited lecture)),  
 The Third Advanced Research Workshop "Gravity, Astrophysics, and Strings @ Black Sea (June 2005, Kiten, Bulgaria, (An invited lecture)),  
 The XXXXth Conference Rencontres de Moriond "Very High Energy Phenomena in the Universe" (La Thuille, Italy, March, 2005),  
 The Spanish Conference on General Relativity (ERE-2004) (Madrid, Spain, September 2004),  
 SIGRAV Conference on General Relativity, (Vietri sul Mare, Italy, September 2004),  
 The 22nd Summer School and International Symposium on the Physics of Ionized Gases, (Bajina Basta, Serbia, August 2004 (An invited lecture)),  
 The Symposium "Impacts of Gravitational Lensing on Cosmology (IAU Symposium 225)", Lausanne, (Switzerland, July 2004),  
 The Conference "Exploring The Universe", Rencontres de Moriond, (La Thuille, Italy, March 2004),

The Joint European and National Meeting JENAM 2003 of the European Astronomical Society and the Hungarian Astronomical Society in Budapest (2003),  
 The XXXVIIIth Conference Rencontres de Moriond Workshop on Gravitational Waves and Experimental Gravity (Les Arcs, 2003),  
 The Third Sakharov Conference on Physics (Moscow, June 2002),  
 The Second Conference on Gravitational waves ASTROD-1 (Nanjing, China, 2002),  
 The IAU 214 Symposium on Active processes in Astrophysics (Suzhou, China, 2002)  
 The Conference "Gamma-Ray Universe", Rencontres de Moriond, (Les Arcs, France, 2002)  
 The First Conference on Gravitational waves ASTROD-1 (Beijing, China, 2001),  
 "Cosmological Physics with Gravitational Lensing", The the XXXVth Rencontres de Moriond, (Les Arcs, France, 2000)  
 Joint European and National Meeting JENAM 2001 of the European Astronomical Society and the Astronomische Gesellschaft at Munich,  
 The International Conference on Cosmology (COSMO-2000) (Cheju, Korea, 2000),  
 International Conference on Cosmology and Particle Physics (CAPP-2000) (Verbier, Switzerland, 2000),  
 The 9th Marcel Grossmann Meeting on Gravity (Rome, 2000),  
 The International Conference on Dark Matter DARK-2000 (Heidelberg, Germany, 2000),  
 The International Conference on Gravitational Lenses in the Universe (Les Arcs, France, 2000),  
 The Joint European and National Astronomical Society (Moscow, Russia, 2000),  
 The International ICRA Workshop on Chaotic Universe (Rome - Pescara - Rome, 1999),  
 The International Conference on Gravitational Waves and Experimental Gravity (Les Arcs, France, 1999),  
 19th Texas Symposium on Relativistic Astrophysics (Paris, France, 1998),  
 15th Conference on General Relativity and Gravitation (Pune, India, 1997),  
 8th Marcel Grossmann Meeting on Gravity (Jerusalem, 1997),  
 The Second Edoardo Amaldi Conference on Gravitational Waves (CERN, Geneva, 1996),  
 The International Conference on Gravitational Waves: sources and detectors (Pisa, 1996),  
 18th Texas Symposium on Relativistic Astrophysics (Chicago, USA, 1996),  
 14th Conference on General Relativity and Gravitation (Florence, Italy, 1995),  
 17th Texas Symposium on Relativistic Astrophysics (Munich, Germany, 1994),  
 The Second Meeting of the European Astronomy Society (Torun, Poland, 1993),  
 The Gravitational Lenses in the Universe (Liege, Belgium, 1993),  
 The Directions in General Relativity (College Park, Maryland, USA, 1993)  
 The First Iberian Meeting on Gravity (Evora, Portugal, 1992),  
 The IV Conference Rencontres de Blois (Blois, France, 1992) and talks at a couple of earlier conferences.

## Recent personal seminars and colloquia

- Trajectories of bright stars at the Galactic Center as a tool to evaluate a graviton mass (North Carolina central University, Durham, November 2016)
- The discovery of gravitational waves: past, present and future (North Carolina central University, Durham, November 2016)
- Trajectories of bright stars at the Galactic Center as a tool to evaluate a graviton mass (Sternberg Astronomical Institute at Moscow State University, Moscow, October 2016)

- The discovery of gravitational waves: past, present and future (Sternberg Astronomical Institute at Moscow State University, Moscow, September 2016)
- The Galactic Center: observations and interpretations (May 2016, Institute of High Energy Physics, Protvino, Russia)
- The Galactic Center as a unique laboratory for a new physics (April 2016, Institute of Physics, Opava, Czech Republic)
- The discovery of gravitational waves: past, present and future (April 2016, Institute of Physics, Opava, Czech Republic)
- The discovery of gravitational waves: past, present and future (Comenius University, Bratislava, Slovakia, April 2016)
- The discovery of gravitational waves: past, present and future (Institute of Technical and Experimental Physics (UTEF), Prague, Czech Republic, April 2016)
- The discovery of gravitational waves with LIGO (March 2016, Bogoliubov Laboratory on Theoretical Physics, Joint Institute of Nuclear Research, Dubna)
- The Galactic Center as a unique laboratory for a new physics (March 2016, Sternberg Astronomical Institute, Moscow State University, Moscow, Russia)
- The Galactic Center as a unique laboratory for a new physics (February 2016, Lebedev Physics Institute, Moscow, Russia)
- The Galactic Center as a unique laboratory for a new physics (June 2015, Bogoliubov Laboratory on Theoretical Physics, Joint Institute of Nuclear Research, Dubna)
- The black hole at the Galactic Center as a unique laboratory for a new physics (Beijing Planetarium, May 2015)
- Exoplanet searches with gravitational microlensing: polarization aspects (National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China, March 2015)
- The Galactic Center as a unique laboratory for a new physics, (Kavli Institute for Astronomy and Astrophysics, Peking University, Beijing, China, April 2015)
- The Galactic Center as a unique laboratory for a new physics, (National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China, March 2015)
- The Galactic Center as a unique laboratory for a new physics (Sternberg Astronomical Institute, Moscow State University, Moscow, January 2015)
- Results from Planck mission, (Bogoliubov Laboratory of Theoretical Physics, JINR, Dubna, Russia, May 2013)
- Mathematicians vs Physicists: Disputes on Priority at Astronomical Observatory of Belgrade (Belgrade, Serbia, May 2013)
- Supermassive black hole at the Galactic Center (North Carolina Central University, Durham, USA, April 2013)

- Black hole at the Galactic Center at University of Missouri (Columbia, Missouri, USA, January 2013)
- Exoplanetary searches with gravitational microlensing: polarization issues (University of Rome "La Sapienza" Rome, November 2012)
- Lensing, microlensing, exoplanary searches, (University of Salento Lecce, November 2012)
- The black hole at the Galactic Center (Astronomical Observatory of Belgrade, Serbia, September 2012)
- Exoplanetary searches with gravitational microlensing at the lunch seminar in National Astronomical Observatories of Chinese Academy of Sciences (Beijing, September, 2012).
- Supermassive black hole at the Galactic Center, The theoretical seminar at Institute of Theoretical and Experimental Physics, Moscow, April 2012.
- Black hole at the Galactic Center, Ya.B. Zeldovich All-Moscow Seminar of Astrophysicists, Sternberg Astronomical Institute of Moscow State University (Moscow, March, 2012)
- Black holes at galactic centers, Institute of Theoretical and Experimental Physics, (Moscow, February, 2012)
- Black hole at the Galactic Center, Bogoliubov Laboratory of Theoretical Physics, Joint Institute for Nuclear Research, (Dubna, February, 2012)
- Shadows around black holes as a tool to evaluate black hole parameters and spacetime dimensions (Roma University La Sapienza, Rome, Italy, December 2011)
- Exoplanet searches with microlensing (Salento University, Lecce, Italy, December 2011)
- Constraints on a Randall-Sundrum II braneworld metric of the black hole at the Galactic Center (Sternberg State Astronomical Institute Moscow State University, Moscow , September, 2011)
- Exoplanet searches with microlensing (Astronomical Observatory of Belgrade, June 2011)
- Exoplanet searches with gravitational microlensing (National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China, June 2010)
- Exoplanet searches with microlensing, (Bogoliubov Laboratory of Theoretical Physics, Joint Institute for Nuclear Research, Dubna, April 2010)
- Exoplanet searches with microlensing, (Institute for Nuclear Research, March 2010, Moscow)
- The Role of Dark Matter and Dark Energy in Cosmological Models: Theoretical Overview, (Ioffe Physical-Technical Institute of the Russian Academy of Sciences, St Petersburg, Russia, March 2010)
- Exoplanet searches with microlensing, (Sankt-Petersburg Astrophysical Seminar, Institute of Applied Astronomy, Sankt-Petersburg, Russia, March 2010)
- Exoplanet searches with microlensing, (Pulkovo Observatory of Russian Academy of Sciences, Pulkovo, Sankt-Petersburg, Russia, March 2010)

- Exoplanet searches with microlensing, (Sternberg Astronomical Institute, Moscow, Russia February 2010)
- Exoplanet searches with microlensing, (The first Italian Russian round tableDubna, JINR, December 2009)
- Exoplanet searches with microlensing, (Ioffe Physical-Technical Institute of the Russian Academy of Sciences, St Petersburg, December 2009)
- Exoplanet searches with microlensing, (University La Sapienza, Roma, Italy, December, 2009)
- Introduction in gravitational lensing (Padova University, Padova, Italy, December 2009)
- Exoplanet searches with microlensing (Lecce University, Lecce, Italy, December 2009)
- Exoplanet searches with microlensing (SISSA, Trieste, December 2009)
- Exoplanet searches with microlensing, (Lebedev Physics Institute of Russian Academy of Sciences , Moscow, October, 2009)
- Exoplanet searches with microlensing, (Space Research Institute of Russian Academy of Sciences , Moscow, October, 2009)
- Exoplanet searches with microlensing (Institute of Astronomy of Russian Academy of Sciences (INASAN, October 2009)
- Exoplanet searches with microlensing, (ITEP, Moscow, September, 2009)
- Astrophysical ways for an evaluation of black hole parameters (Sternberg Astronomical Institute , Moscow, September, 2009)
- Dark matter and dark energy: Theoretical overview (Institute for Nuclear Research, Moscow, May 2009)
- Gravitational lensing: from micro to nano (Sternberg Astronomical Institute , Moscow, March 2009)
- Dark matter and dark energy (Sternberg Astronomical Institute, Moscow, December 2008)
- Dark matter and dark energy: approaches and constraints (Bogoliubov Laboratory for Theoretical Physics, JINR, Dubna, Russia, November 2008)
- Gravitational lensing: macro, micro, pixel (Joint Institute for Nuclear Research, Dubna, September, 2008)
- Apoastron shift constraints on dark matter distribution at the Galactic Center (Shanghai Astronomical Observatory, October 2007)
- Dark Matter and Dark Energy or Alternative Theories of Gravity (Shanghai Normal University, October 2007)
- Gravitational Microlensing: Results and Perspectives (NAOC, Beijing, China, September, 2007)

- Constraints of alternative theories of gravity and cosmology (Joint Institute for Nuclear Research Dubna, March, 2007)
- Constraints on Alternative Theories of Gravity and Cosmology (Institute of Theoretical and Experimental Physics, February, 2007)
- Solar System Constraints on Alternative Theories of Gravity and Cosmology, National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China, (January 2007)
- Constraints on Alternative Theories of Gravity and Cosmology (Peking University, Beijing, January, 2007)
- Constraints on Alternative Theories of Gravity and Cosmology (Institute of Theoretical Physics of Chinese Academy of Sciences, Beijing, January 2007)
- Development of Russian and Soviet Astronomy (Beijing Planetarium, January 2007)
- What should black hole look like? (Beijing Planetarium, January 2007)
- Alternative theories for gravity and cosmology and constraints on their parameters, (December , 2006, Purple Mountain Observatory, Nanjing, China)
- Observational Features of Black Hole Existence (December 2006, Nanjing University, Nanjing, China)
- Butterfly Life of Fourth Order Gravity: Birth, Life and Death (Institute of High Energy Physics, Beijing, December 2006)
- Dark Matter: Theoretical overview (Institute of Theoretical and Experimental Physics, September, 2006)
- Microlensing Searches with the Radioastron Space Mission (Joint Institute for Nuclear Research Dubna, June, 2006)
- Measuring Parameters of Supermassive Black Holes from Space (Institute of Theoretical Physics, Beijing, China November, 2005)
- Microlensing Searches with the Space Missions (Purple Mountain Observatory and Nanjing University, Nanjing, China, November, 2005)
- Measuring Parameters of Supermassive Black Holes with Space Missions (Institute for Nuclear Research Dubna, September, 2005)
- Observational properties of black holes (Astro Space Center of Lebedev Physics Institute, Pushchino, February, 2005)
- Black holes: Theory versus observations (Lebedev Physics Institute, Moscow, February 2005)
- Observational properties of black holes, SISSA, (Trieste), September 2004.
- An influence of gravitational lensing on gravitational radiation, University of Rome (Tor Vergata), May 2004.

- The iron  $K_\alpha$  line as a tool for a rotating black hole geometry analysis, University of Lecce and INFN section of Lecce, April 2004.
- Gravitational microlensing, University of Lecce, March 2003.
- Gravitational microlensing, National Astronomical Observatories of Chinese Academy of Sciences, Beijing, China, June 2003.
- The iron  $K_\alpha$  line as a tool for analysis of a rotating black hole characteristics, Beijing University, China, July 2003.
- Gravitational microlensing (ten years later), Institute of Theoretical and Experimental Physics, Moscow, Russia, December 2003.

## Other activity

Referee for Astrophysical Journal, Classical and Quantum Gravity, Journal of Physics A, International Journal of Modern Physics D, Astronomy & Astrophysics, Astrophysical Journal, European Physical Journal, European Physical Journal Letters, Journal of Experimental and Theoretical Physics, Astronomy Reports, Astronomy Letters etc.

Principal Investigator or a participant of the several scientific grants of Russian Foundation of Basic Research, International Science Foundation, National Science Foundation.

**The first exoplanet in M31 galaxy has been discovered (mass media reaction on Ingrassio, De Paolis, Nucita, Calchi Novati, Jetzer, Zakharov paper in MNRAS (2009))**

New Scientist

<http://www.newscientist.com/article/dn17287-first-extragalactic-exoplanet-may-have-been-found>

<http://www.newscientist.com/section/science-news>

Technology Review (Published by MIT)

<http://www.technologyreview.com/blog/arxiv/23619/>

FOX News

<http://www.foxnews.com/story/0,2933,525886,00.html>

BBC

<http://news.bbc.co.uk/2/hi/science/nature/8097141.stm>

Universe Today

<http://www.universetoday.com/2009/06/10/first-extra-galactic-planet-may-have-been-detected/>

Scientific American

<http://www.scientificamerican.com/article.cfm?id=planet-spotted-in-andromeda-galaxy-2009-06>

Daily Telegraph

<http://www.telegraph.co.uk/science/science-news/5534891/Planet-six-times-the-mass-of-Jupiter-found-in-M31-galaxy/>

World News

[http://article.wn.com/view/2009/06/14/Hint\\_of\\_planet\\_outside\\_our\\_galaxy/](http://article.wn.com/view/2009/06/14/Hint_of_planet_outside_our_galaxy/)

Russian Press

[http://www.gazeta.ru/science/2009/06/10\\_a\\_3209024.shtml?lj2](http://www.gazeta.ru/science/2009/06/10_a_3209024.shtml?lj2)

<http://www.rian.ru/science/20090618/174737604.html> (with an interview to Alexander Zakharov)

<http://rian.ru/science/20090609/173875820.html> Intervista con il

Prof. Jetzer (University of Zurich)

<http://www.spektrum.de/artikel/1008445>

La Repubblica

<http://www.repubblica.it/2008/12/gallerie/scienze/pianeta-extragalattico/1.html>

Il Mattino

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Quotidiano di Lecce

<http://www.lecceprima.it/articolo.asp?articolo=14980>



Quotidiano di Puglia

[http://www.quotidianopuglia.it/leggi\\_notizia.asp?ID=8034](http://www.quotidianopuglia.it/leggi_notizia.asp?ID=8034)

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<http://news.softpedia.com/news/First-Exoplanet-in-Another-Galaxy-Found-113678.shtml>

ASTRONOMIND

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FRESHNEWS (INDIA)

<http://www.freshnews.in/first-planet-spotted-outside-the-milky-way-may-lie-in-andromeda-ga>

BBC News

Hint of planet outside our galaxy By Jason Palmer Science and technology reporter, BBC News

Astronomers believe they have seen hints of the first planet to be spotted outside of our galaxy. Situated in the Andromeda galaxy, the planet appears to be about six times the mass of Jupiter. The method hinges on gravitational lensing, whereby a nearer object can bend the light of a distant star when the two align with an observer. The results will be published in Monthly Notices of the Royal Astronomical Society (MNRAS). The team, made up of researchers from the National Institute of Nuclear Physics (INFN) in Italy and collaborators in Switzerland, Spain, and Russia, exploited a type of gravitational lensing called microlensing.

FOX News

AP/NASA First Planet in Another Galaxy Possibly Found

Friday, June 12, 2009

Astronomers may have found the first planet in another galaxy, according to New Scientist magazine.

Scientific American

SkyMania- June 14, 2009 Planet 'spotted' in Andromeda galaxy  
Astronomers believe they may have discovered the first planet ever detected in another galaxy. The new world was apparently glimpsed in the closest giant spiral galaxy to the Milky Way, Messier 31 in the constellation of Andromeda. It lies an incredible 2.5 million light-years away - too far normally to be seen. But it revealed itself thanks to a phenomenon called microlensing where the gravitational field of an object closer to Earth acts like a magnifying glass. Astronomers believe they may have discovered the first planet ever detected in another galaxy. The new world was apparently glimpsed in the closest giant spiral galaxy to the Milky Way, Messier 31 in the constellation of Andromeda. It lies an incredible 2.5 million light-years away - too far normally to be seen. But it revealed itself thanks to a phenomenon called microlensing where the gravitational field of an object closer to Earth acts like a magnifying glass. Amazingly, it has taken the astronomers five years to realise that they probably netted an extra-galactic planet. They observed a peculiar microlensing event while studying the Andromeda galaxy - which can be seen as a dim blur with the unaided eye - in 2004. The international team, using the UK's Isaac Newton Telescope on the Canary Island of La Palma, thought at the time that they had recorded a pair of stars orbiting each other. But computer simulations and other calculations have persuaded them that they actually observed a star with a smaller, planet sized companion about six times bigger than Jupiter. More than 300 so-called exoplanets have been found orbiting other stars in our own galaxy. And NASA has launched a \$595 million spaceprobe called Kepler to watch 100,000 stars for signs of world like Earth.

Wikipedia

In 2009, the first planet may have been discovered in the Andromeda Galaxy. This candidate was detected using a technique called microlensing, which is caused by the deflection of light by a massive object. [26]

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Selected Publications – Journals (Total list contains more than 150 items)

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18 February 2018

Alexander Zakharov