

CURRICULUM VITAE

1 PERSONAL

Last Name: Chilingaryan (publishing as Chilingarian)
First Name: Igor
Phone: +1-617-4952475 (office)
Email: chil@sai.msu.ru, igor.chilingarian@cfa.harvard.edu
Date of birth: May 16th, 1980
Place of Birth: Moscow, USSR
Citizenship: Russian / French bi-national
Family status: Single, never married
Languages: Russian (native), English (fluent)
French (good), Spanish (basic)
Hobbies: Sports (table tennis: university team level; mountaineering; rock climbing)
Cycling Tours, Photography, Travel,
UNIX System and Network Administration, Software Development
Affiliations: Armenian Astronomical Society
Société Française d'Astronomie et d'Astrophysique
Moscow State University Alumni



2 EMPLOYMENT HISTORY

- **1995–2000:** part-time jobs related to system administration, software and web development
- **2001:** Institute of X-ray Optics, part-time job: programming of micro-controllers
- **2001–2002:** research assistant at SAO RAS under supervision of Prof. V. Afanasiev and Dr. S. Dodonov (total duration of stay in the observatory in 1998–2002 about 18 months, including ~50 nights of observations with various instruments, mostly 3D spectroscopy)
- **Sep/2003 – Jan/2004:** Teaching as part of a PhD course: “Programming for Astronomers” course for 1st and 2nd year undergraduates at MSU.
- **Dec/2004 – Feb/2005:** Invited researcher at the Observatoire de Paris, Paris Virtual Observatory project
- **Apr/2005 – Dec/2006:** Researcher (half-time) at the Sternberg Astronomical Institute (SAI), MSU, Russia
- **Dec/2006 – present:** researcher, then leading researcher *on leave* at SAI MSU, Russia
- **Dec/2006 – Nov/2009:** CNRS-funded temporary contract (CDD) within the “Horizon” project, LERMA – Observatory of Paris, France
- **Dec/2009 – Aug/2011:** Postdoc at Centre de Données Astronomiques de Strasbourg, Observatory of Strasbourg: 50% research, 50% duties (Virtual Observatory)
- **Sep/2011 – present:** Astronomer at Telescope Data Center, Optical and Infrared Astronomy Division, Smithsonian Astrophysical Observatory

3 EDUCATION

Pre-University

1987 – 1994: Musical school of the Moscow Conservatoire (2nd top ranked in Russia)

- Certificate of basic musical education (piano)

1992 – 1997: High School 1534 advanced in physics and mathematics, Moscow

- State certificate of high-school education, *excellent grade in all disciplines, gold medal*

Five astronomy-related publications in Russian popular-science journals in 1995–1997.

Undergraduate

Sep 1997 – Jan 2003: Master of Astronomy at the Moscow State University,
Department of Experimental Astronomy of the Faculty of Physics.

- Apr 2001: Undergraduate Thesis in Astronomy: “The Spiral Galaxy NGC 23: Photometry and Kinematics”, advisor: Dr. O. Khoruzhii, Institute of Astronomy, Russian Academy of Sciences (RAS)
- Dec 2002: Diploma Thesis in Astronomy: “Classification of Objects by Their Spectral Energy Distributions”, advisor: Dr. S. Dodonov, Special Astrophysical Observatory of RAS.
- **Degree (22/Jan/2003):** *specialist* in astronomy, *diploma with distinction, gold medal*, qualified as *Master-M2* by the University of Lyon-1

Graduate

Apr 2003 – Nov 2006: PhD in Astrophysics at the Moscow State University
Department of Experimental Astronomy, Faculty of Physics.

- **Title: “Formation and Evolution of Dwarf Elliptical Galaxies”**
Feb/2005 – Nov/2006: co-supervised PhD between Moscow State University and Université Lyon-1 Claude Bernard (Lyon, France).
- **Advisors:** Dr. Olga Sil’chenko and Dr. Philippe Prugniel
- **Funding:** INTAS Young Scientist Fellowship
- **Degrees (23/Nov/2006):** *PhD in astrophysics* (University of Lyon-1) and *candidate of physics and mathematical sciences, speciality 01.03.02 “astrophysics, radioastronomy”* (Moscow State University)

07/Oct/2010): *Doctor of physics and mathematical sciences (habilitation), speciality 01.03.02 “astrophysics, stellar astronomy”* (Moscow State University)

- **Title: “Evolution of early-type galaxies from observations, simulations, and the Virtual Observatory”**

4 RESEARCH AND TECHNOLOGICAL PROJECTS

The participation is indicated as follows: *period of time: project – role*

- 1999–2002: VORTEX, search of new structures in spiral galaxies – analysis and interpreting Fabry-Perot data cubes and resulting velocity fields
- 2000–2003: Search for primeval galaxies and very distant QSO’s with 6-m telescope – development and implementation of algorithms for photometrical classification and redshifts
- 2000–2006: HyperLEDA – responsible for the database system
- 2001–2004: AstroNET (Russian Astronomical Network) Sky Map online project, <http://www.astronet.ru/db/map/> – principal developer
- 2002–2004: Studies of nearby AGNs – automatic normalization of AGN spectra
- 2003–2004: MASTER project, GRB optical follow-up – development of the fully automatic data processing pipeline, interpreting the results
- 2003–2004: pgSphere, methods to deal with spherical coordinates in PostgreSQL DBMS – software developer
- 2004–2010: ASPID (Archive of Spectral, Photometric, and Interferometric Data) at SAO RAS (<http://alcor.sao.ru/db/aspid/> ; <http://alcor.sao.ru/php/search>) – PI
- 2004–present: VO-Paris (Paris Virtual Observatory) – development of VO services and applications in the Observatoire de Paris-Meudon, supporting VO resource registry
- 2005–present: Member of the “Data Models” Working Group of the International Virtual Observatory Alliance (IVOA) – development of the Characterisation Data Model of IVOA, application to 3D-spectroscopy, scientific applications
- 2006–present: Spectroscopic studies of low-luminosity early-type galaxies in the nearby clusters – PI, data analysis (ESO/VLT FLAMES, SAO RAS/BTA MPFS), scientific interpretation
- 2006–2010: The nature of gas-rich E+A galaxies – data analysis (ESO/VLT VIMOS), extraction of internal kinematics and stellar population parameters, scientific interpretation
- 2006–present: HORIZON GalMer Database – tools to generate synthetic spectra of galaxy mergers, to manipulate and display the data, creating and managing the database and the project web-site (<http://galmer.obspm.fr/>)
- 2007–present: Search of compact elliptical, ultra-compact dwarf and tidally stripped galaxies in the Virtual Observatory – PI, development and implementation of algorithms, data analysis, scientific interpretation
- 2008–present: Multi-wavelength value-added catalogue of spectral energy distributions, kinematics and stellar population properties of nearby galaxies – PI
- 2011–present: Universal data reduction pipeline for NIR spectroscopy – PI

5 AWARDS and GRANTS

High-school

- 1994, Moscow Olympiad in Chemistry, 2nd prize
- 1995, Moscow Olympiad in Chemistry, 4th prize
- 1995, Moscow Olympiad in Astronomy, 1st prize
- 1995, Russian National Olympiad in Astronomy and Space Physics, 1st prize
- 1996, Moscow Olympiad in Astronomy, 2nd prize
- 1996, Russian National Olympiad in Astronomy and Space Physics, 1st prize
- 1996, First International Astronomical Olympiad, 1st prize
- 1997, Moscow Olympiad in Astronomy, 1st prize
- 1997, Russian National Olympiad in Astronomy and Space Physics, 1st prize

University (undergraduate and graduate), post-doctoral, professional

Awards:

- 2001: 1st prize on the student research work competition in astronomy “Astronet-2001” for the Undergraduate Thesis
- 2003: 1st prize on the student research work competition in astronomy “Astronet-2003” for the Master Thesis
- 2003: D. Martynov award for the Master Thesis.
- 2004: Personal PhD student stipend of the Government of the Russian Federation
- 2006: 2nd prize for the PhD thesis on the competition of young researchers in physics organized by the Faculty of Physics of the Moscow State University
- 2007: Armenian Astronomical Society Annual Prize for young astronomers
- 2012: Medal for young scientists by the Russian Academy of Sciences in physics and astronomy

Personal grants: 21 Personal travel and research grants (as PI) including 2 postdoc offers in 2002–2009

- 2002: Russian Foundation for Basic Research (RFBR) young researcher grant in Informational Technologies (02-07-06096)
- 2003: RFBR young researcher grant in Informational Technologies (03-07-06116)
- 2003: ADASS organizing committee grant to attend ADASS-XIII
- 2004: European Astronomical Society travel grant to attend JENAM-2004
- 2004: RFBR travel grant and ADASS organizing committee grant to attend ADASS-XIV
- 2005: IAU grant to attend IAU Colloquium 198
- 2005: INTAS Young Scientist Fellowship (PhD) (2 years, 04-83-3618)

- 2005: RFBR travel grant and ADASS organizing committee grant to attend ADASS-XV
- 2005: ESO travel grant to attend ESO–Euro3D Workshop
- 2006: Travel grant of the organizing committee of “Mapping the Galaxy and Nearby Galaxies”
- 2006: RFBR travel grant and ADASS organizing committee grant to attend ADASS-XVI
- 2006: IAU grant to attend IAU Symposium 241
- 2007: Travel grant of the organizing committee of “Pathways Through an Eclectic Universe”
- 2007: IAU grant to attend IAU Symposium 245
- 2007: EAS grant to attend JENAM-2007
- 2007: ADASS organizing committee grant to attend ADASS-XVII
- 2007: Gemini Science Fellow (Chile) – declined
- 2008: ADASS organizing committee grant to attend ADASS-XVIII
- 2009: ESO Visiting Scientist (1 month in Santiago)
- 2009: IAU grant to attend IAU General Assembly
- 2009: AAO Magellan Fellowship (postdoc) – declined

Co-investigator in several RFBR research grants (2002–present) in astronomy and IT, co-author of the joint Russian-Flemish RFBR–Flanders grant “V3D: 3D spectroscopic survey of the Virgo cluster and nearby groups” (awarded ~100.000 Euro)

PI and co-investigator in several research projects (2006–2011) funded by VO-France (Action Specifique de l’Observatoire Virtuel), VO-Paris Data Centre, PNG/PNCG (Programme Nationale Galaxies).

President of Russia grant for young DSc (2012–present) – PI (awarded ~\$33.000/yr for two years)

6 CONFERENCES and SEMINARS

Conferences and workshops (attended personally):

1. Lomonosov-2003 student conference, physics-astronomy section (Moscow, Russia, 14 March 2003): **talk**
2. ADASS-XIII (Strasbourg, France, 12-15 Oct 2003): **poster**
3. IVOA Interoperability Meeting (Strasbourg, France, 16-17 Oct 2003)
4. Russian National Astronomical Conference VAK-2004 (Moscow, 24-28 May 2004): **3 posters + co-author of 3 talks**
5. JENAM-2004 (Granada, Spain, 14-17 September 2004): **talk + 2 posters**
6. IVOA Interoperability Meeting (Pune, India, 27-30 Sep 2004)
7. ADASS-XIV (Pasadena, USA, 24-27 October 2004): **poster**
8. AVO Science Demo (Villafranca del Castillo, Spain, 25 Jan 2005)

9. International Astronomical Union Colloquium 198 (Les Diablerets, Switzerland, 14-18 March 2005): **poster + co-author of a talk**
10. IVOA Interoperability Meeting (Kyoto, Japan, 14-18 May 2005): **talk**
11. ADASS-XV (El Escorial, Spain, 2-5 Oct 2005): **talk + co-author of 2 posters**
12. IVOA Interoperability Meeting (Villafranca del Castillo, Spain, 6-7 Oct 2005): **talk**
13. ESO Workshop: Science Perspectives for 3D Spectroscopy (Garching, Germany 10-13 Oct 2005): **poster + co-author of 1 poster and 1 talk**
14. IVOA Interoperability Meeting (Victoria, Canada, 15-18 May 2006): **talk**
15. Mapping the Galaxy and Nearby Galaxies (Ishigaki, Japan, 26-30 Jun 2006): **poster**
16. IVOA Interoperability Meeting (Moscow, Russia, 18-22 Sep 2006): **talk**
17. ADASS-XVI (Tucson, USA, 15-18 Oct 2006): **poster + co-author of a poster**
18. IAU Symposium 241 (La Palma, Spain, 11-15 Dec 2006): **2 posters + co-author of 1 poster and 1 talk**
19. ESA Workshop “Optical Spectroscopy and the Virtual Observatory” (Villafranca del Castillo, Spain, 21-23/Mar/2007): **talk + co-author of 3 posters, member of the Science Organizing Committee**
20. “Pathways Through an Eclectic Universe” (Playa de La Arena, Tenerife, Spain, 23-27/Apr/2007): **poster**
21. IVOA Interoperability Meeting (Beijing, China, 14-18 May 2007): **talk**
22. VO-France Theory Group Workshop (Lyon, France, 18-19 Jun 2007): **talk**
23. IAU Symposium 245 (Oxford, UK, 16-20 Jul 2007): **poster**
24. JENAM-2007 (Yerevan, Armenia, 20-25 Aug 2007): **2 talks + co-author of 3 posters**
25. ADASS-XVII (London, UK, 23-26 Sep 2007): **poster + co-author of a poster**
26. IVOA Interoperability Meeting (Cambridge, UK, 27-28 Sep 2007): **talk**
27. “Spectroscopy for Cosmology and Galaxy Evolution 2005-2015” (Granada, Spain, 3-5 Oct 2007): **talk**
28. “Formation and Evolution of Galaxies in the Prospective of MUSE” (Lyon, France, 7-9 Nov 2007): **talk and live demo**
29. VO-France meeting (Paris, France, 26-28 Nov 2007): **2 talks**
30. “Nuclear Star Clusters Across the Hubble Sequence” (Heidelberg, Germany, 25-27 Feb 2008): **talk**
31. “Galactic Structure and the Structure of Galaxies” (Ensenada, Mexico, 17-21 Mar 2008) **poster**
32. IVOA Interoperability Meeting (Trieste, Italy, 19-23 May 2008): **2 talks**

33. “Gas and Stars in Galaxies: a Multi-Wavelength 3D Perspective” (ESO, Germany, 10-13 Jun 2008): **talk**
34. “21st meeting of CODATA (CODATA-08). Session on Astronomical Data and the Virtual Observatory.” (Kiev, Ukraine, 3-8 Oct 2008): **2 talks**
35. IVOA Interoperability Meeting (Baltimore, USA, 27-31 Oct 2008): **2 talks**
36. ADASS-XVIII (Quebec-city, Canada, 2-5 Nov 2008): **poster**
37. “Multi-wavelength Astronomy and the Virtual Observatory Workshop.” (Villafranca del Castillo, Spain, 1-3 Dec 2008): **invited talk**
38. “ESO Star Cluster Workshop” (Santiago, Chile, 10 Mar 2009): **talk**
39. IVOA Interoperability Meeting (Strasbourg, France, 19-23 May 2009): **2 talks**
40. Galaxy wars: star formation and stellar population in interacting galaxies (Johnson-city, TN, USA, 20-23 Jul 2009): **talk**
41. XXVI IAU General Assembly (Rio de Janeiro, Brazil, 3-14 Aug 2009): **3 posters**
42. Nearby Dwarf Galaxies (SAO RAS, Russia, 14-18 Sep 2009): **talk**
43. ADASS-XIX (Sapporo, Japan, 4-7 Oct 2009): **talk**
44. VO-France meeting (Paris, France, 28-29 Oct 2009): **talk**
45. IVOA Interoperability Meeting (ESO, Garching, Germany, 9-12 Nov 2009): **talk**
46. IVOA Interoperability Meeting (Victoria, Canada, 17-21 May 2010): **2 talks**
47. Dynamics and evolution of disc galaxies (Moscow, Russia, 31/May-04/Jun 2010): **invited review**
48. European Planetary Science Congress (Rome, Italy, 20-24/Sep/2010): **invited talk**
49. Early-type Dwarf Galaxies: Origin, Evolution, Characteristics (Heidelberg, Germany, 18-20/Oct/2010): **invited talk**
50. ADASS-XX (Boston, USA, 7-11 Nov 2010): **talk**
51. IVOA Interoperability Meeting (Nara, Japan, 7-11 Dec 2010): **2 talks**
52. EuroVO-ICE Technology Forum (Trieste, Italy, 12-14 Apr 2011): **talk**
53. IVOA Interoperability Meeting (Naples, Italy, 15-19 May 2011): **live demo**
54. EWASS/JENAM (St.Petersburg, Russia, 4-8 Jul 2011): **invited talk + 2 talks**
55. IAU Symposium 284 (Preston, UK, 5-9 Sep 2011): **poster + co-author of a poster**
56. ADASS-XXI (Paris, France, 6-10 Nov 2011): **poster + co-author of 2 posters**
57. XXVII IAU General Assembly (Beijing, China, 20-30 Aug 2012): **3 posters + co-author of 2 posters**
58. ADASS-XXII (Champaign, IL, USA, 4-8 Nov 2012): **poster + co-author of a poster**

Invited seminars/lectures:

1. Jan/2001: Seminar of the Department of Theoretical Physics, Faculty of Physics, Moscow State University, Russia
2. Sep/2002: General Seminar of the Special Astrophysical Observatory of RAS, Russia
3. Dec/2002: Seminar of the CRAL Observatoire de Lyon, Lyon, France
4. Jan/2005: Virtual Observatory Seminar of the Observatoire de Paris-Meudon, France
5. Feb/2005: Seminar of the GEPI laboratory, Observatoire de Paris-Meudon, France
6. Jun/2005: Seminar of the Institute of Astronomy, Russian Academy of Sciences, Russia
7. Feb/2006: Seminar of Astrophysics and Stellar Astronomy Department of Sternberg Astronomical Institute, Russia
8. Nov/2006: General Seminar of the Institute of Astronomy, RAS, Russia
9. Nov/2006: Seminar of Astrophysics and Stellar Astronomy Department of SAI MSU, Russia
10. Jun/2007: Seminar of the LERMA laboratory, Observatoire de Paris-Meudon, France
11. Oct/2007: 3 invited lectures and 2 hands-on demo sessions at the Virtual Observatory School (Institute of the Theoretical Physics and Astronomy, University of Vilnius, Lithuania)
12. Oct/2007: Seminar of the Observatory of Gent, University of Gent, Belgium
13. Feb/2008: Seminar of the Geneva Observatory, Versoix, Switzerland
14. May/2008: Seminar on Astronomical Instrumentation of SAI MSU, Russia
15. Aug/2008: General Seminar of the Special Astrophysical Observatory of RAS, Russia
16. Sep/2008: "Science tea" seminar at Hertzberg Institute of Astrophysics, Victoria, Canada
17. Mar/2009: "Vitacura science lunch": seminar at European Southern Observatory, Santiago, Chile
18. May/2009: Virtual Observatory tutorial for students and staff members at SAI MSU, Moscow, Russia
19. May/2009: "Virtual Observatory day at the Observatoire de Cote d'Azur", Nice, France
20. May/2009: Seminar of the LERMA laboratory, Observatoire de Paris-Meudon, France
21. Jun/2009: Virtual Observatory Seminar of the Observatoire de Paris-Meudon, France
22. Dec/2009: Seminar of Astrophysics and Stellar Astronomy Department of SAI MSU, Russia
23. Jan/2010: Seminar of Observatoire de Besancon, France
24. Mar/2010: Seminar of Astrophysics and Stellar Astronomy Department of SAI MSU, Russia
25. May/2010: General Seminar of the Special Astrophysical Observatory of RAS, Russia
26. May/2010: Seminar at the Department of Astronomy, Washington State University, USA

27. Jun/2010: Virtual Observatory tutorial (8h, joint with I. Zolotukhin) for the staff of Paris Observatory and Paris Institute of Astrophysics, France
28. Jun/2010: Invited lecture and a hands-on demo session at the Astrominformatics and the Virtual Observatory summer school (University of Belgrade, Serbia)
29. Sep/2010: Seminar of the Astrospace centre, Lebedev Physics Institute, Russia
30. Sep/2010: Lecture at the IAU International School for Young Astronomers-2010, Yerevan, Armenia
31. Nov/2010: Tutorial at the ADASS-XX conference, Boston, USA
32. Dec/2011: Seminar at GEMINI-South/CTIO, Chile
33. Mar/2012: Colloquium at ESO/Vitacura, Chile
34. Mar/2012: Extragalactic talk at ESO/Vitacura, Chile
35. May/2012: OIR Seminar, Smithsonian Astrophysical Observatory, Cambridge, USA
36. Sep/2012: Invited lecture at the GAIA/LSST Visualisation School, Seattle, USA
37. Nov/2012: Tutorial at the ADASS-XXII conference, Boston, USA

7 TECHNICAL / OBSERVATIONAL EXPERIENCE

18 months (in total) of research assistant / night assistant work at the Special Astrophysical Observatory (SAO RAS) during 5.5 years of the “master of astronomy” course of the Moscow State University (09/1997 – 01/2003), totally ~50 nights at the telescope, including support of service mode observations. 15 nights of observations as a visiting observer in 2004-2010; 2 nights at Magellan/Baade; 36 nights at Magellan Clay in 2011-2012.

Observations

1. Optical *3D-spectroscopy* using MPFS (Multi Pupil Fiber Spectrograph), MOFS (Multi Object Fiber Spectrograph) and IFP (Fabri-Perot Interferometer) at BTA (Russian 6-m telescope of SAO RAS)
2. Optical *multi-slit spectroscopy*, *long-slit spectroscopy*, and *direct imaging* at BTA with the SCORPIO universal spectrograph
3. Optical *long-slit spectroscopy* and *direct imaging* with the 1-m Zeiss telescope (SAO RAS)
4. Optical *IFU spectroscopy* with the Calar-Alto 3.5m telescope using PMAS
5. Optical *multi-slit spectroscopy*, *long-slit spectroscopy* at Magellan with IMACS
6. NIR *multi-slit spectroscopy*, *long-slit spectroscopy*, and *direct imaging* at Magellan with MMIRS; support of MMIRS observations

Astronomical data reduction

1. optical IFU spectroscopy (fiber-lens spectrographs) using the original RSI IDL software package to process IFU data coming from MPFS (6-m telescope), GMOS (Gemini), FLAMES-Giraffe (ESO), PMAS (Calar-Alto), and VIMOS-IFU (ESO)
2. optical multi-object spectroscopy (multi-slit, multi-fiber)
3. optical long-slit spectroscopy from various instruments, including extremely low surface brightness absorption-line objects (down to $\mu_B = 25.5 \text{ mag arcsec}^{-2}$)
4. optical direct images from various large and small telescopes (incl. development of the data processing pipeline for robotic telescope)
5. optical scanning Fabry-Perot interferometry
6. optical high-resolution Echelle spectroscopy
7. NIR multi-slit and long-slit spectroscopy: developed a data reduction pipeline for MMIRS (MMT/Magellan Infrared Spectrograph)

Astronomical data analysis

1. **integrated photometry**: DAOphot/IDLphot, SExtractor
2. **surface photometry**: elliptical isophotes analysis (IRAF ellipse), 1D and 2D (GalFit) brightness profile decomposition; colour maps using adaptive 2D binning algorithm
3. **azimuthal Fourier analysis** of images and velocity fields
4. **line-strength indices**: computing and interpreting absorption line strengths in terms of stellar populations
5. **full spectral fitting**: extraction of absorption- and emission-line kinematics, chemical abundances and stellar population properties of galaxies; high-precision radial velocities of stars
6. **stellar population modelling**: PEGASE2/PEGASE.HR, applications to results of N-body simulations
7. **workflows**: development of automatic and semi-automatic pipelines for data discovery, retrieval and analysis using Virtual Observatory technologies

Skills in IT and computational science

High-level UNIX hacker, able to read/write/debug code and scripts of any level of complexity in any major programming language. Level of experience is indicated as follows: (a) – advanced, (g) – good, (b) – basic

1. **Hardware** (incl. maintenance): PC-ix86 (a), Sun – Sparc/UltraSPARC (b), DEC Alpha (b), Atmel and Scenix micro-controllers (a)
2. **OS (user)**: Linux/*BSD/Solaris/Tru64 Unix/SCO Unix/Windows – (a) for all
3. **OS (system administrator)**: Linux (a) / *BSD (g) / Solaris (g) / Tru64 Unix (b) / Windows NT/2k/XP (b)

4. **Clusters:** MOSIX on Linux (g), OpenMOSIX (b)
5. **DBMS:** BerkeleyDB (b), MySQL (b), PostgreSQL (a)
6. **Programming:** C (a) / C++ (g) / Perl (a) / Fortran (g) / Pascal (g) / Java (a) / Javascript (g) / XML (b) / x86 Assembler (b)
7. **Algorithms:** standard numerical techniques and statistics: χ^2 minimization, maximum-likelihood method, fast Fourier transform, etc. (a), image deconvolution and reconstruction (b), artificial neural networks (b), genetic algorithms (b), pattern recognition (b)
8. **Internet:** TCP/IP (a), secure protocols (g), Web-development (a), CGI (a), Web-services (g), Web-2.0 technologies (g)
9. **Science and astronomy software:** RSI IDL (a) / Maple (g) / GSL – GNU Science Library (g) / CFITSIO (a) / MIDAS (b) / IRAF (b) / LaTeX (g)

8 SCIENTIFIC ACTIVITIES

Publications:

- 33 (15 as the 1st author) refereed papers published, 2 peer-reviewed Virtual Observatory standards
- 47 (25 as the first author) published conference proceedings in 2003–2014,
- 14 Gamma-Ray Burst Network Circulars (GCN) in 2003–2004

See details in the list of publications.

660 citations (483 as the first author) listed in ADS as of Mar/2014; H-index: 13

Reviewing: Astronomy & Astrophysics (1 paper), MNRAS (3 papers), ApJS (1 paper), ApJL (2 papers), Astronomy Letters (3 papers)

Observing programmes:

- 2 nights at Magellan/Baade 6.5m (01/2013): FIRE NIR spectrograph (as PI)
- 2 nights at Magellan/Baade 6.5m (01/2012): IMACS spectrograph (as PI)
- 24 hours at VLT/UT4 8m (2010-2011): SINFONI+LGS NIR spectrograph (as co-I)
- 2 nights at the Calar-Alto 3.5m (01/2010): PMAS IFU spectrograph (as co-I)
- 2 nights at the Russian 6-m telescope (01/2010): SCORPIO universal spectrograph (as PI)
- 2 nights at the Russian 6-m telescope (02/2009): SCORPIO universal spectrograph (as PI)
- 3 nights at the Calar-Alto 3.5m (01/2009): PMAS IFU spectrograph (as co-I)
- 2 nights at the Russian 6-m telescope (01/2009): SCORPIO universal spectrograph (as PI)
- 2 nights at the Russian 6-m telescope (02/2008): SCORPIO universal spectrograph (as PI)
- Director's Discretionary Time at the Calar-Alto 3.5m (2008): TWIN spectrograph (as PI)

- Director's Discretionary Time at the Calar-Alto 3.5m (2007): PMAS IFU spectrograph (as PI)
- Observing time in a frame of several proposals as Co-Investigator (about 20 nights at the Russian 6-m telescope (2003-2007): MPFS IFU spectrograph, SCORPIO universal spectrograph and imager; 3 nights at VLT: VIMOS in the IFU mode)
- Substantial observational experience (about 100 nights of observations) using various instruments at the Russian 6-m telescope: IFU, multi-object, multi-slit, and long-slit spectroscopy, direct imaging, Fabry-Perot interferometry; Las Campanas observatory (Magellan – Baade and Clay 6.5m telescopes)

Student supervision:

- **2007 – 2008:** Supervision of a student A. Novikova (master thesis in astronomy at the Moscow State University, Russia, defended on 24/Dec/2008).
- **2008 – 2009:** Co-supervision of a PhD student I. Zolotukhin (Moscow State University, defended on 1/Oct/2009)
- **2012 – 2014:** Co-supervision of a PhD student A. Kasparova (Moscow State University, defence planned in May/2014)